

# Vydyne® 909 BK

Polyamide 66/6 Copolymer

Ascend Performance Materials Operations LLC

Message:

Vydyne 909 BK is an halogenated, 25% glass-filled, flame-retardant PA66/6 copolymer with excellent strength and toughness. It is lubricated for machine feed and easy mold release and has an Underwriters Laboratories UL 94 flammability classification of V-0 at 0.4 mm (0.016") thick.

| General Information    |                                    |
|------------------------|------------------------------------|
| Filler / Reinforcement | Glass Fiber,25% Filler by Weight   |
| Additive               | Halogen                            |
|                        | Lubricant                          |
| Features               | Flame Retardant                    |
|                        | Good Crack Resistance              |
|                        | Good Mold Release                  |
|                        | Good Toughness                     |
|                        | Halogenated                        |
|                        | High Rigidity                      |
|                        | High Strength                      |
|                        | Ignition Resistant                 |
|                        | Lubricated                         |
| Uses                   | Appliances                         |
|                        | Automotive Electronics             |
|                        | Bobbins                            |
|                        | Connectors                         |
|                        | Electrical Housing                 |
|                        | Electrical Parts                   |
|                        | Electrical/Electronic Applications |
|                        | Fasteners                          |
|                        | Industrial Applications            |
|                        | Lighting Applications              |
|                        | Living Hinges                      |
|                        | Printed Circuit Boards             |
| RoHS Compliance        | RoHS Compliant                     |
|                        | 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 : 23°C, 2.00 mm         | 1.0    | --                | %                 |             |
| Flow : 23°C, 2.00 mm                | 0.40   | --                | %                 |             |
| Water Absorption                    |        |                   |                   | ISO 62      |
| 23°C, 24 hr                         | 0.70   | --                | %                 |             |
| Equilibrium, 23°C, 50% RH           | 1.3    | --                | %                 |             |
| Mechanical                          | Dry    | Conditioned       | Unit              | Test Method |
| Tensile Modulus (23°C)              | 9100   | 7100              | MPa               | ISO 527-2   |
| Tensile Stress (Break, 23°C)        | 132    | 90.0              | MPa               | ISO 527-2   |
| Tensile Strain (Break, 23°C)        | 2.2    | 3.0               | %                 | ISO 527-2   |
| Flexural Modulus (23°C)             | 8300   | 5000              | MPa               | ISO 178     |
| Flexural Strength (23°C)            | 193    | 140               | MPa               | ISO 178     |
| Poisson's Ratio                     | 0.40   | --                |                   | ISO 527-2   |
| Impact                              | Dry    | Conditioned       | Unit              | Test Method |
| Charpy Notched Impact Strength      |        |                   |                   | ISO 179/1eA |
| -30°C                               | 9.5    | --                | kJ/m <sup>2</sup> |             |
| 23°C                                | 9.4    | --                | kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength    |        |                   |                   | ISO 179/1eU |
| -30°C                               | 35     | --                | kJ/m <sup>2</sup> |             |
| 23°C                                | 40     | --                | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength (23°C) | 9.0    | --                | kJ/m <sup>2</sup> | ISO 180     |
| Thermal                             | Dry    | Conditioned       | Unit              | Test Method |
| Heat Deflection Temperature         |        |                   |                   |             |
| 0.45 MPa, Unannealed                | 250    | --                | °C                | ISO 75-2/B  |
| 1.8 MPa, Unannealed                 | 230    | --                | °C                | ISO 75-2/A  |
| Melting Temperature                 | 250    | --                | °C                | ISO 11357-3 |
| CLTE                                |        |                   |                   | ISO 11359-2 |
| Flow : 23 to 55°C, 2.00 mm          | 2.0E-5 | --                | cm/cm/°C          |             |
| Transverse : 23 to 55°C, 2.00 mm    | 1.0E-4 | --                | cm/cm/°C          |             |
| RTI Elec                            |        |                   |                   | UL 746      |
| 0.400 mm                            | 65.0   | --                | °C                |             |
| 0.750 mm                            | 130    | --                | °C                |             |
| 1.50 mm                             | 130    | --                | °C                |             |
| 3.00 mm                             | 130    | --                | °C                |             |

|                                                 |            |             |      |                |
|-------------------------------------------------|------------|-------------|------|----------------|
| RTI Imp                                         |            |             |      | UL 746         |
| 0.400 mm                                        | 65.0       | --          | °C   |                |
| 0.750 mm                                        | 65.0       | --          | °C   |                |
| 1.50 mm                                         | 95.0       | --          | °C   |                |
| 3.00 mm                                         | 95.0       | --          | °C   |                |
| RTI Str                                         |            |             |      | UL 746         |
| 0.400 mm                                        | 65.0       | --          | °C   |                |
| 0.750 mm                                        | 110        | --          | °C   |                |
| 1.50 mm                                         | 110        | --          | °C   |                |
| 3.00 mm                                         | 110        | --          | °C   |                |
| Electrical                                      | Dry        | Conditioned | Unit | Test Method    |
| Arc Resistance (3.00 mm)                        | PLC 6      | --          |      | ASTM D495      |
| Comparative Tracking Index (3.00 mm)            | 250 to 399 | --          | V    | IEC 60112      |
| High Amp Arc Ignition (HAI)                     |            |             |      | UL 746         |
| 0.750 mm                                        | PLC 0      | --          |      |                |
| 1.50 mm                                         | PLC 0      | --          |      |                |
| High Voltage Arc Tracking Rate (HVTR) (3.00 mm) | PLC 3      | --          |      | UL 746         |
| Hot-wire Ignition (HWI)                         |            |             |      | UL 746         |
| 0.750 mm                                        | PLC 0      | --          |      |                |
| 1.50 mm                                         | PLC 0      | --          |      |                |
| Flammability                                    | Dry        | Conditioned | Unit | Test Method    |
| Flame Rating                                    |            |             |      | UL 94          |
| 0.400 mm                                        | V-0        | --          |      |                |
| 0.750 mm                                        | V-0        | --          |      |                |
| 1.50 mm                                         | V-0        | --          |      |                |
| 3.00 mm                                         | V-0        | --          |      |                |
| Glow Wire Flammability Index                    |            |             |      | IEC 60695-2-12 |
| 0.400 mm                                        | 960        | --          | °C   |                |
| 0.750 mm                                        | 960        | --          | °C   |                |
| 1.50 mm                                         | 960        | --          | °C   |                |
| 3.00 mm                                         | 960        | --          | °C   |                |
| Glow Wire Ignition Temperature                  |            |             |      | IEC 60695-2-13 |
| 0.400 mm                                        | 930        | --          | °C   |                |
| 0.750 mm                                        | 750        | --          | °C   |                |
| 1.50 mm                                         | 750        | --          | °C   |                |
| 3.00 mm                                         | 800        | --          | °C   |                |
| Oxygen Index                                    | 32         | --          | %    | ISO 4589-2     |
| Injection                                       | Dry        | Unit        |      |                |
| Drying Temperature                              | 80.0       |             | °C   |                |

|                        |              |    |
|------------------------|--------------|----|
| Drying Time            | 4.0          | hr |
| Suggested Max Regrind  | 25           | %  |
| Rear Temperature       | 240 to 270   | °C |
| Middle Temperature     | 240 to 270   | °C |
| Front Temperature      | 240 to 270   | °C |
| Nozzle Temperature     | 240 to 270   | °C |
| Processing (Melt) Temp | 250 to 270   | °C |
| Mold Temperature       | 65.0 to 95.0 | °C |

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#### Recommended distributors for this material

### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

