

# Vydyne® R515J NT0689

polyamide 66



Vydyne R515J NT0689 is a natural, 15% glass-filled, high-flow PA66 that is heat-stabilized with an electrically neutral heat stabilizer. It is specially designed for electrical applications requiring high dielectric strength, low conductivity and corrosion resistance.

## General

|                       |                                                                         |                                                              |                                                                 |
|-----------------------|-------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------|
| Regional Availability | • North America                                                         | • Europe                                                     | • Asia Pacific                                                  |
| Additive              | • Heat Stabilizer                                                       | • Lubricant                                                  |                                                                 |
| Features              | • Chemical Resistant<br>• Good Electrical Properties<br>• High Strength | • Corrosion Resistant<br>• Good Mold Release<br>• Lubricated | • Good Colorability<br>• High Flow<br>• Organic Heat Stabilized |
| Agency Rating         | • ASTM, D4066 PA012G15<br>• EU, 10/2011                                 | • ASTM, D6779 PA012G15<br>• EU, 2023/2006                    | • EC, 1935/2004<br>• FDA, 21 CFR 177.1500                       |
| UL File Number        | • E70062                                                                |                                                              |                                                                 |
| Appearance            | • Natural Color                                                         |                                                              |                                                                 |
| Forms                 | • Pellets                                                               |                                                              |                                                                 |
| Processing Method     | • Injection Molding                                                     |                                                              |                                                                 |

## Physical

|                             | dry  | cond. | Unit              | Test Standard |
|-----------------------------|------|-------|-------------------|---------------|
| Density                     | 1.24 | -     | 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        | 0.5  | *     | %                 |               |
| Water Absorption            |      |       |                   | ISO 62        |
| 23°C, 24 hr                 | 1    | *     | %                 |               |
| Equilibrium, 23°C, 50% RH   | 2.2  | *     | %                 |               |

## Mechanical

|                              | dry  | cond. | Unit | Test Standard |
|------------------------------|------|-------|------|---------------|
| Tensile Modulus (23°C)       | 6600 | -     | MPa  | ISO 527-2     |
| Tensile Stress (Break, 23°C) | 120  | -     | MPa  | ISO 527-2     |
| Tensile Strain (Break, 23°C) | 3    | -     | %    | ISO 527-2     |
| Flexural Modulus (23°C)      | 5900 | -     | MPa  | ISO 178       |
| Flexural Strength (23°C)     | 170  | -     | 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                          | 6   | -     | kJ/m <sup>2</sup> |               |
| -30°C                          | 6   | -     | kJ/m <sup>2</sup> |               |

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|                                  |    |   |                   |             |
|----------------------------------|----|---|-------------------|-------------|
| Charpy Unnotched Impact Strength |    |   |                   | ISO 179/1eU |
| +23°C                            | 34 | - | kJ/m <sup>2</sup> |             |
| -30°C                            | 32 | - | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength     |    |   |                   | ISO 180/1A  |
| +23°C                            | 6  | - | kJ/m <sup>2</sup> |             |
| -30°C                            | 6  | - | kJ/m <sup>2</sup> |             |

| Thermal                          | dry | cond. | Unit  | Test Standard |
|----------------------------------|-----|-------|-------|---------------|
| Heat Deflection Temperature      |     |       |       | ISO 75-2/A    |
| 1.80 MPa, Unannealed             | 241 | -     | °C    |               |
| 0.45 MPa, Unannealed             | 258 | -     | °C    |               |
| Melting Temperature              | 260 | *     | °C    | ISO 11357-3   |
| CLTE                             |     |       |       | ISO 11359-2   |
| Flow : 23 to 55°C, 2.00 mm       | 30  | *     | E-6/K |               |
| Transverse : 23 to 55°C, 2.00 mm | 112 | *     | E-6/K |               |
| RTI Elec                         |     |       |       | UL 746        |
| 0.750 mm                         | 120 |       | °C    |               |
| 1.50 mm                          | 120 |       | °C    |               |
| 3.00 mm                          | 120 |       | °C    |               |
| RTI Imp                          |     |       |       | UL 746        |
| 0.750 mm                         | 85  |       | °C    |               |
| 1.50mm                           | 85  |       | °C    |               |
| 3.00 mm                          | 105 |       | °C    |               |
| RTI Str                          |     |       |       | UL 746        |
| 0.750 mm                         | 115 |       | °C    |               |
| 1.50 mm                          | 120 |       | °C    |               |
| 3.00 mm                          | 120 |       | °C    |               |

| Electrical                                     | dry   | cond. | Unit  | Test Standard |
|------------------------------------------------|-------|-------|-------|---------------|
| Volume Resistivity (1.00 mm)                   | 1E11  | -     | Ohm*m | IEC 60093     |
| Dielectric Strength (1.00 mm)                  | 24    | -     | kV/mm | IEC 60243     |
| Arc Resistance (3.00 mm)                       | 5     |       | -     | ASTM D 495    |
| Comparative Tracking Index (3.00 mm)           | 600   |       | V     | IEC 60112     |
| High Amp Arc Ignition (HAI)                    |       |       |       | UL 746        |
| 0.750 mm                                       | PLC 4 |       | -     |               |
| 1.50 mm                                        | PLC 4 |       | -     |               |
| 3.00 mm                                        | PLC 4 |       | -     |               |
| High Voltage Arc Tracking Rate (HVTR), 3.00 mm | PLC 1 |       | -     | UL 746        |

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

