

# Vydyne® 49H BK0743

polyamide 66



Vydyne 49H BK0743 is a general-purpose, impact-modified, high modulus PA66 resin. 49H BK0743 is recognized for all the processing and property advantages inherent to PA66 with the addition of improved impact strength. This resin offers a well balanced combination of engineering properties characterized by high melt point, good surface lubricity, abrasion resistance, resistant to most chemicals including motor oils, transmission fluids, lubricants and fuels.

## General

|                           |                                                                                      |                                                                                       |                                                                           |
|---------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Regional Availability     | • North America                                                                      | • Europe                                                                              | • Asia Pacific                                                            |
| Additive                  | • Heat Stabilizer                                                                    |                                                                                       |                                                                           |
| Features                  | • Abrasion Resistance<br>• Gasoline Resistant<br>• Good Toughness<br>• Oil Resistant | • Chemical Resistant<br>• General Purpose<br>• Heat Stabilized<br>• Solvent Resistant | • Fast Molding Cycle<br>• Good Processability<br>• High Impact Resistance |
| Automotive Specifications | • Tesla TM-1006-30100 (compliance)                                                   |                                                                                       |                                                                           |
| Appearance                | • Black                                                                              |                                                                                       |                                                                           |
| Forms                     | • Pellets                                                                            |                                                                                       |                                                                           |
| Processing Method         | • Injection Molding                                                                  |                                                                                       |                                                                           |

## Physical

|                             | dry  | cond. | Unit              | Test Standard |
|-----------------------------|------|-------|-------------------|---------------|
| Density                     | 1.12 | -     | g/cm <sup>3</sup> | ISO 1183      |
| Molding Shrinkage           |      |       |                   | ISO 294-4     |
| Across Flow : 23°C, 2.00 mm | 2.2  | *     | %                 |               |
| Flow : 23°C, 2.00 mm        | 2.6  | *     | %                 |               |

## Mechanical

|                              | dry  | cond. | Unit | Test Standard |
|------------------------------|------|-------|------|---------------|
| Tensile Modulus (23°C)       | 2700 | 1300  | MPa  | ISO 527-2     |
| Tensile Stress (Yield, 23°C) | 71   | 45    | MPa  | ISO 527-2     |
| Tensile Strain (Break, 23°C) | 21   | 84    | %    | ISO 527-2     |
| Flexural Modulus (23°C)      | 2600 | 1100  | MPa  | ISO 178       |
| Flexural Strength (23°C)     | 78   | 29    | MPa  | ISO 178       |

## Impact

|                                  | dry | cond. | Unit              | Test Standard |
|----------------------------------|-----|-------|-------------------|---------------|
| Charpy Notched Impact Strength   |     |       |                   | ISO 179/1eA   |
| +23°C                            | 9.1 | 21    | kJ/m <sup>2</sup> |               |
| -30°C                            | 7.9 | 12    | kJ/m <sup>2</sup> |               |
| -40°C                            | 7.3 | 11    | kJ/m <sup>2</sup> |               |
| Charpy Unnotched Impact Strength |     |       |                   | ISO 179/1eU   |
| +23°C                            | N   | N     | kJ/m <sup>2</sup> |               |
| -30°C                            | N   | N     | kJ/m <sup>2</sup> |               |

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|                              |     |    |       |            |
|------------------------------|-----|----|-------|------------|
| -40°C                        | N   | N  | kJ/m² |            |
| Notched Izod Impact Strength |     |    |       | ISO 180/1A |
| +23°C                        | 8   | 22 | kJ/m² |            |
| -30°C                        | 8.4 | 13 | kJ/m² |            |
| -40°C                        | 7.7 | 12 | kJ/m² |            |

| Thermal                     | dry | cond. | Unit | Test Standard |
|-----------------------------|-----|-------|------|---------------|
| Heat Deflection Temperature |     |       |      | ISO 75-2/A    |
| 1.80 MPa, Unannealed        | 67  | 87    | °C   |               |
| 0.45 MPa, Unannealed        | 197 | -     | °C   |               |
| Melting Temperature         | 260 | *     | °C   | ISO 11357-3   |

| Electrical                    | dry | cond. | Unit  | Test Standard |
|-------------------------------|-----|-------|-------|---------------|
| Dielectric Strength (1.00 mm) | 31  | 31    | kV/mm | IEC 60243     |

| 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   |

