

# Amilan™ CM3006G-45 Nylon 66

## TECHNICAL DATA

### Product Description

Heat stabilized, GF45%

### Uses

- Automotive Applications
- Automotive Electronics
- Gears
- Tanks

### Processing Method

- Injection Molding

### ISO Designation

- >PA66-GF45<

### Type

- Nylon66/Reinforced

### ASTM & ISO Properties

| Physical                       | Dry          | Water Absorption | Unit  | Test Method     |
|--------------------------------|--------------|------------------|-------|-----------------|
| Density (23°C)                 | 1.50         | --               | g/cm³ | ISO 1183        |
| Spiral Flow <sup>1</sup>       | 310          | --               | mm    | Internal Method |
| Molding Shrinkage <sup>2</sup> |              |                  |       | Internal Method |
| Across Flow : 3.00 mm          | 0.50 to 0.80 | --               | %     |                 |
| Flow : 3.00 mm                 | 0.20 to 0.40 | --               | %     |                 |
| Water Absorption <sup>3</sup>  |              |                  |       | ISO 62          |
| 24 hr, 23°C                    | 0.40         | --               | %     |                 |
| Saturation, 23°C               | 4.8          | --               | %     |                 |
| Mechanical                     | Dry          | Water Absorption | Unit  | Test Method     |
| Tensile Strength               |              |                  |       | ISO 527-2       |
| -40°C                          | 280          | 250              | MPa   |                 |
| 23°C                           | 220          | 165              | MPa   |                 |
| 80°C                           | 140          | 115              | MPa   |                 |
| Tensile Strain                 |              |                  |       | ISO 527-2       |
| Break, -40°C                   | 2.5          | --               | %     |                 |
| Break, 23°C                    | 3.0          | --               | %     |                 |
| Break, 80°C                    | 5.5          | --               | %     |                 |
| Flexural Modulus               |              |                  |       | ISO 178         |
| -40°C                          | 15500        | 14400            | MPa   |                 |
| 23°C                           | 13800        | 11000            | MPa   |                 |
| 80°C                           | 8600         | 7300             | MPa   |                 |
| Flexural Stress                |              |                  |       | ISO 178         |
| -40°C                          | 380          | 350              | MPa   |                 |
| 23°C                           | 345          | 295              | MPa   |                 |
| 80°C                           | 230          | 195              | MPa   |                 |
| Compressive Stress             |              |                  |       | ISO 604         |
| -40°C                          | 265          | --               | MPa   |                 |
| 23°C                           | 195          | --               | MPa   |                 |
| 80°C                           | 120          | --               | MPa   |                 |
| Shear Strength (23°C)          | 105          | --               | MPa   | ASTM D732       |

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| Impact                                  | Dry                                    | Water Absorption   | Unit                   | Test Method |
|-----------------------------------------|----------------------------------------|--------------------|------------------------|-------------|
| Charpy Notched Impact Strength          |                                        |                    |                        | ISO 179     |
| -40°C                                   | 11.5                                   | 12.0               | kJ/m <sup>2</sup>      |             |
| 23°C                                    | 15.0                                   | 16.5               | kJ/m <sup>2</sup>      |             |
| Charpy Unnotched Impact Strength        |                                        |                    |                        | ISO 179     |
| -40°C                                   | 85.0                                   | 90.0               | kJ/m <sup>2</sup>      |             |
| 23°C                                    | 90.0                                   | 100.0              | kJ/m <sup>2</sup>      |             |
| Hardness                                | Dry                                    | Water Absorption   | Unit                   | Test Method |
| Rockwell Hardness                       |                                        |                    |                        | ISO 2039-2  |
| M-Scale, 23°C                           | 103                                    | --                 |                        |             |
| R-Scale, 23°C                           | 121                                    | --                 |                        |             |
| Thermal                                 | Dry                                    | Water Absorption   | Unit                   | Test Method |
| Deflection Temperature Under Load       |                                        |                    |                        |             |
| 0.45 MPa, Unannealed                    | 263                                    | --                 | °C                     | ISO 75-2/B  |
| 1.8 MPa, Unannealed                     | 255                                    | --                 | °C                     | ISO 75-2/A  |
| Melting Temperature                     | 265                                    | --                 | °C                     | DSC         |
| Specific Heat                           | 1500                                   | --                 | J/kg/°C                |             |
| Thermal Conductivity                    | 0.42                                   | --                 | W/m/K                  |             |
| Coefficient of Linear Thermal Expansion | 2 to 3                                 | --                 | cm <sup>3</sup> /cm/°C | ISO 11359-2 |
| Electrical                              | Dry                                    | Water Absorption   | Unit                   | Test Method |
| Volume Resistivity                      | 1.0E+13                                | 1.0E+10 to 1.0E+11 | ohms·m                 | IEC 60093   |
| Electric Strength                       | 19                                     | --                 | kV/mm                  | IEC 60243-1 |
| Dielectric Constant                     |                                        |                    |                        | IEC 60250   |
| 23°C, 50 Hz                             | 4.7                                    | --                 |                        |             |
| 23°C, 1 kHz                             | 4.5                                    | --                 |                        |             |
| 23°C, 1 MHz                             | 4.1                                    | --                 |                        |             |
| Dissipation Factor                      |                                        |                    |                        | IEC 60250   |
| 23°C, 50 Hz                             | 0.020                                  | --                 |                        |             |
| 23°C, 1 kHz                             | 0.020                                  | --                 |                        |             |
| 23°C, 1 MHz                             | 0.020                                  | --                 |                        |             |
| <b>Additional Information</b>           |                                        |                    |                        |             |
| Dry                                     | Water absorption Moisture content 1.0% |                    |                        |             |

## Notes

<sup>1</sup> Melt Temperature: 290°C, Injection Pressure: 900 bar, 2.00 mm

<sup>2</sup> 80x80x3mm

<sup>3</sup> in water

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