

DMR Material PA66

Polyamide / Nylon 66 Engineering Thermoplastic



MATERIAL DATA SHEET (Version 5.1 – 05.2019)

Description

PA66, commonly referred to as Nylon 66 is a very rugged material that offers good heat and chemical resistance while also providing good abrasion resistance. PA66 also provides good sliding properties through a low coefficient of friction and typically like other grades of Nylon it provides excellent strength, impact and creep resistance.

PA66 has similar properties to PA6G but absorbs more moisture (up to 9%) and is not as dimensionally stable. The addition of fibres and fillers to this material increases properties such as strength, stiffness and decreases moisture absorption. PA66 is used widely in the automotive industry and generally where good impact resistance and strength are required

Physical Properties

| Property | Test method | Unit | Typical value |
|--|-------------|------------------------------------|---------------|
| Modulus of elasticity from tensile test | ISO 527 | MPa | 3000 |
| Elongation at break | ISO 527 | % | 30 |
| Flexural strength | ISO 178 | MPa | 135 |
| Water Absorption (Saturated) | ISO 62 | % | 9.0 |
| Density | ISO 1183 | g/cm ³ | 1.14 |
| Creep rate stress at 1% elongation | DIN 53444 | Mpa | >8 |
| Melting Point | ISO 3146 | °C | +265 |
| Coefficient Of Linear Thermal Expansion | | 10 ⁻⁵ . K ⁻¹ | 9 |
| Static Coefficient of friction | | µs | 0.35 |
| Operating temperature range (Long term) | | °C | -30 to +100 |
| Operating temperature range (short term) | | °C | +150 |

Main Characteristics

- Excellent abrasion and wear resistance
- Good thermal resistance
- Good impact strength
- High moisture absorption
- Not as dimensionally stable as other types of Polyamide / Nylon
- Can be attacked by strong oxidizing agents, acids and bases.

Typical products

- Anti-Extrusion / Back-up Rings
- Thrust washers
- Bearing rings / guide rings
- Bushes
- Slider pads
- rollers
- Bespoke parts

Typical Applications

Due to its good strength, impact and creep resistance, PA66 is commonly used for parts in the automotive industry where these properties are required. Care should be taken when choosing Polyamide materials due to most grades having particularly high moisture absorption rates.

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