

M SEALS PA11-BD83

Polyamide 11 Engineering Thermoplastic

MATERIAL DATA SHEET (Version 6.0 – 05.2022)



Description

M Seals material PA11-BD83 is an engineering plastic of natural origin derived from Castor Oil and is commonly referred to as Nylon 11, Polyamide11 or PA11. This material has good mechanical properties in the areas of tensile strain, wear resistance and compressive strength, and in comparison, to other more standard grades of Nylon, the material does not absorb humidity to the same levels and maintains its shock resistance while working in any humid environments.

While PA11-BD83 has the excellent features of other Nylon materials without suffering from hygroscopicity, the high price of this material and general lack of availability in comparison prevents its wider use in many industrial applications.

Physical Properties

| Property | Test method | Unit | Typical value |
|---|-------------|----------------------------------|-------------------|
| Density | ISO 1183 | g/cm ³ | 1.04 |
| Hardness | ISO 2039 | Shore D | 83 |
| Tensile strength | ISO 527 | N/mm ² | 45 |
| Elongation at break | ISO 527 | % | 270 |
| Tensile Modulus of elasticity | ISO 527 | MPa | 1800 |
| Water absorption - saturation @23°C | ISO 62 | % | 2.5 |
| Surface resistivity | IEC 60093 | Ohm | >10 ¹⁴ |
| Volume resistivity | IEC 60093 | Ohm cm | >10 ¹⁴ |
| Melting Point | ISO 3156 | °C | 183 |
| Coefficient Of Linear Thermal Expansion | | 10 ⁻⁶ K ⁻¹ | 125 |
| Service temperature (Long term) | | °C | -50 to +85 |
| Service temperature (short term - max) | | °C | +120 |

Main Characteristics

- Good allround mechanical properties
- Good wear resistance
- Excellent low temperature resistance
- Low water absorption

Typical Products

- Anti-Extrusion / Back-up Rings
- Bearing rings / guide rings
- Bushes
- Bespoke parts

Typical Applications

Due to its good mechanical properties and low moisture uptake, PA11-BD83 is a good material choice for bearing bushes, rollers, thrust washers and parts requiring good dimensional stability in humid environments.

The high price of this material and the general lack of availability in common stock shapes in comparison to other Nylons prevents this material from wider use in many industrial applications. Please check availability of this product before specifying into any application.

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