

Material Datasheet — MC Nylon (Monomer Cast Polyamide 6)

Overview

MC Nylon is a cast polyamide 6 with larger cross-section availability, higher crystallinity, and better wear resistance than extruded nylon. It is ideal for large gears, rollers, bushings, and structural components where size and performance matter. Oil-filled and MoS₂-filled grades available.

Key Features

- Available in very large diameters (up to 1000mm+) and thick sections
- Excellent wear resistance and low friction
- Good noise damping and vibration absorption
- Self-lubricating, oil-filled and MoS₂ grades available
- High mechanical strength and toughness
- Cost-effective alternative to bronze and steel bearings

Technical Properties

Property	Value	Unit	Test Standard
Density	1.13 - 1.16	g/cm ³	ASTM D792
Tensile Strength	70 - 90	MPa	ASTM D638
Elongation at Break	10 - 30	%	ASTM D638
Flexural Modulus	2500 - 3200	MPa	ASTM D790
Hardness (Rockwell M)	85 - 100	Rockwell M	ASTM D785
HDT (1.8MPa)	100 - 120	°C	ASTM D648
Melting Point	215 - 225	°C	—
Continuous Use Temp	80 - 100	°C	—
Water Absorption (24h)	1.5 - 2.0	%	ASTM D570
Coefficient of Friction	0.15 - 0.30	—	—
Impact Strength (Notched)	5 - 10	kJ/m ²	ASTM D256
Wear Resistance	Excellent	—	—

Typical Applications

- Large gears, worm wheels, rack gears
- Rollers, pulleys, wheels for material handling
- Bushings, bearings, wear plates, guide strips
- Textile machinery: cam discs, crankshafts
- Automotive: suspension parts, pulleys
- Marine: propellers, bearings, impellers

Available Forms

- Sheets (extruded / molded): thickness 0.5mm - 200mm
- Rods: diameter 3mm - 300mm
- Tubes / hollow bars
- Custom CNC machined parts per CAD drawings