

POLYMAT PA6

BASIC MATERIAL FOR ENGINEERING NYLON 6 (POLYAMIDE 6)

POLYMAT POLYAMIDE 6 (PA 6) extruded stock shapes are part of high performance engineering plastic products offered under trade name **POLYMAT** for machining into industrial components. These products are made using best raw material in modern production facility under strict quality control regime. The result is highly crystalline product of consistent quality conforming to international standards.

PA 6 offers a unique combination of mechanical and thermal characteristics rendering it useful in wide variety of demanding load-bearing applications. It has good impact resistance, excellent wear and abrasion resistance, very low coefficient of friction and is easy to fabricate.

These properties make it an ideal cost effective substitute for conventional materials like steel, brass, bronze, gunmetal, white metal, aluminium, phenolics, wood, rubber and plastic. Use of PA 6 in numerous applications over several decades now has established its utility, reliability and favorable economics on cost/ performance basis.

POLYMAT stock shapes can be easily fabricated into custom components using standard metal working machines like lathe, drilling, milling etc. The back side provides basic information on technical properties for designing PA 6 parts. More specific technical data and engineering assistance are readily available through our technical staff upon request.

ADVANTAGES

- Low Weight (1/7th weight of steel)
- Self-lubricating (low coefficient of friction)
- Excellent Wear and Abrasion resistance
- Noise Reduction
- High Impact strength
- Non-toxic
- Excellent Machinability

APPLICATIONS

- Machine Building
- Materials Handling
- Textile and Paper
- Transportation (Rail / Auto / Marine)
- Appliances
- Food Processing
- Pharmaceutical
- Electrical / Electronics

MECHANICAL

<i>PROPERTY</i>	<i>TEST METHOD ASTM</i>	<i>UNITS</i>	<i>PA 6</i>
Tensile Strength	D 638	MPa	54
Elongation at Break	D 638 Dry	%	50 - 100
	Moist	%	200
Modulus of Elasticity	D 638	MPa	1800
Compressive Strength	D 695	MPa	58
Hardness - Rockwell	-	-	M 82
Izod Impact Strength (Notched)	D 256	J/m	4

THERMAL

<i>PROPERTY</i>	<i>TEST METHOD ASTM</i>	<i>UNITS</i>	<i>PA 6</i>
Coefficient Of Linear Thermal Expansion	D 696	m/m° K	10 X 10 ⁻⁶
Melting Point	D 2117	°C	220
Heat Distortion Temperature	D 648 A	°C	60
	B	°C	160
Min. Service Temperature	-	°C	-40
Max. Service Temperature	-	°C	Cont.90 Inter.110

ELECTRICAL

<i>PROPERTY</i>	<i>TEST METHOD ASTM</i>	<i>UNITS</i>	<i>PA 6</i>
Dielectric Constant	D 150		4
Dielectric Strength	D 149 Dry	KV/mm	100
	Moist		60
Volume Resistivity	D 257	Ohm.cm	1 x 10 ¹²

MISCELLANEOUS

<i>PROPERTY</i>	<i>TEST METHOD ASTM</i>	<i>UNITS</i>	<i>PA 6</i>
Specific Gravity	D 792		1.14
Moisture Absorption - 24 Hrs. / Saturation	D 750	%	3.0 / 9.5
Coefficient Of Friction vs. Steel	Non Lubricated		0.4

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