

PA6 - extruded polyamide 6

Other material names PA6: silon, nylon

Material group: Polyamide

This material offers an optimal combination of mechanical strength, stiffness, toughness, mechanical damping properties and wear resistance. These properties, together with good electrical insulating properties and a good chemical resistance make PA6 a “general purpose” grade for mechanical construction and maintenance.



Color of material:

Natur

Black



Typical applications:

- Rollers
- Slide bearings
- Slide elements
- Components under varying stress
- Parts subject to high impacts and shocks

The material is used in:

Electrotechnical industry
Automobile industry
Packaging industry
Engineering industry
Production of single-purpose machines

Features:

- High mechanical strength, stiffness, hardness and toughness
- Good fatigue resistance
- High mechanical damping ability
- Good sliding properties
- Excellent wear resistance
- Good electrical insulating properties
- Good resistance to high energy radiation (gamma- and X-rays)
- Good machinability

Material availability: Material is in stock

Material properties table

Specific weight	1.14 g/cm ³
Yield strength	76 N/mm ²
Allowable mean pressure deformation 1%	24.00 N/mm ²
Allowable mean pressure deformation 2%	46.00 N/mm ²
Allowable mean pressure deformation 5%	80.00 N/mm ²
p.v dry limit	0.11 MPa.m/s
Flexural strength	130 N/mm ²
Tensibility	50 %

Flexural modulus	2 500 N/mm ²
Tensile modulus	3 200 N/mm ²
Impact toughness	bez zlomu
Notched toughness	>5 kJ/m ²
Ball hardness	150 N/mm ²
Friction coefficient	0.38
Sliding wear	0.23 um/km
Antistatic material	No
Permittivity	3.90
Electrical strength	25 kV/mm
Specific internal resistance	10 ¹² Ω
Specific surface resistance	10 ¹² Ω.cm
Melting point	220 °C
Thermal expansion	10 · 10 ⁻⁵ /K
Thermal conductivity	0.28 W/(K.m)
Permanent use temperature	-30 ; 95 °C
Transient temperature of use	-40 ; 140 °C
Absorbability	2,6 %
Water absorption	10 %
Resistance - oils	resistant
Acid resistance	conditionally resistant
Durability - alkali	conditionally resistant
Food contact	No
Special features	PA6 can absorb up to 7% (by weight) water under high humidity or submerged in water. This can result in dimensional changes up to 2% and a corresponding reduction of physical properties. Proper design techniques can frequently compensate for this factor.

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