

What is PA 6 G M natural

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PA 6 G, special compound M

PA 6 G M natural is a cast polyamide 6 special compound with MoS₂ modification. It offers a balanced property profile between standard PA6 G and more heavily modified sliding grades: good sliding and wear properties combined with high rigidity and toughness.

Properties

PA 6 G M natural is a cast, semi-crystalline polyamide containing MoS₂. The solid lubricant MoS₂ improves sliding and wear behaviour without significantly compromising the basic rigidity and toughness of the PA6 G base material.

Like all polyamides, PA 6 G M natural absorbs moisture from the environment; this makes the material tougher and more impact-resistant, while stiffness and dimensional stability decrease somewhat.

Advantages

- Balanced property profile between standard 6G and modified grades
- Good sliding and wear properties through MoS₂ modification
- High toughness
- Very good machinability

Disadvantages

- Moisture absorption up to 2.5 % in standard atmosphere, causing dimensional and property changes
- Not resistant to strong acids and permanently hot water (hydrolysis)
- Not generally declared for food contact (see FDA declaration)

Processing

PA 6 G M natural can be machined like standard PA6 G using all conventional cutting methods; HSS or carbide tools are sufficient. Good cooling via chip removal remains important to avoid softening or smearing of the surface caused by heat build-up.

For tight tolerances, we take swelling and shrinkage behaviour into account and condition the semi-finished product where required.

Typical Applications

PA 6 G M natural is used wherever high toughness and rigidity are needed alongside good sliding and wear properties, for example in mechanical engineering and conveyor technology.

- Bearing and guide elements
- Wear parts
- Conveyor technology components

Typical Properties

- Balanced property profile
- MoS₂-modified for good sliding properties
- High toughness

Product Examples

- Bearing and guide elements
- Wear parts
- Conveyor technology components

Typical Industries

- Mechanical Engineering
- Conveyor Technology

	Test Method	Unit	Value
General Properties			

	Test Method	Unit	Value
Density	DIN EN ISO 1183-1	g / cm ³	1.16
Water absorption	DIN EN ISO 62	%	2.50
Flammability (Thickness 3 mm / 6 mm)	UL 94		HB / HB
Mechanical Properties			
Yield stress	DIN EN ISO 527	MPa	75
Elongation at break	DIN EN ISO 527	%	>30
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3.400
Notched impact strength	DIN EN ISO 179	kJ / m ²	>3.5
Ball indentation hardness	DIN EN ISO 2039-1	MPa	175
Shore hardness	DIN EN ISO 868	scale D	82
Thermal Properties			
Melting temperature	ISO 11357-3	°C	219
Thermal conductivity	DIN 52612-1	W / (m·K)	0.25
Thermal capacity	DIN 52612	kJ / (kg·K)	1.70
Coefficient of linear thermal expansion	DIN 53752	10 ⁻⁶ / K	80
Service temperature, long term	Average	°C	-40 ... 110
Service temperature, short term (max.)	Average	°C	170
Heat deflection temperature	DIN EN ISO 75, Verf. A, HDT	°C	95