

What is PA 6 G MO black

PA 6 G MO black

PA 6 G, MoS₂-modified (black)

PA 6 G MO black is a cast, black-coloured polyamide 6 special compound with a high MoS₂ content. The modification significantly improves sliding and wear properties, while maintaining high hardness, rigidity and high toughness even at elevated temperatures.

Properties

PA 6 G MO black is a cast, semi-crystalline polyamide with a high MoS₂ content. The solid lubricant significantly improves sliding and wear behaviour, while maintaining the high hardness and rigidity of the PA6 G base material. Toughness remains high even at higher service temperatures.

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

Advantages

- Improved sliding properties through high MoS₂ content
- High hardness and rigidity
- High toughness even at high temperatures
- UV-resistant

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 MO black 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 MO black is used wherever high hardness and rigidity are needed alongside particularly good sliding and wear properties, even under demanding environmental conditions, for example in mechanical engineering, vehicle construction, and the oil and gas industry.

- Bearing and guide elements
- Heavy-duty wear parts
- Components for oil and gas applications

Typical Properties

- Improved sliding properties
- High hardness and rigidity
- UV-resistant

Product Examples

- Bearing and guide elements
- Wear parts
- Oil and gas components

Typical Industries

- Mechanical Engineering
- Vehicle Construction
- Oil & Gas

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm ³	1.15

	Test Method	Unit	Value
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	82
Elongation at break	DIN EN ISO 527	%	35
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3.500
Notched impact strength	DIN EN ISO 179	kJ / m ²	2.5
Shore hardness	DIN EN ISO 868	scale D	83
Thermal Properties			
Melting temperature	ISO 11357-3	°C	216
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