

Polyamide 6 MO black - Stock Shapes

Chemical Designation

PA 6 (Polyamide 6)

Colour

black opaque

Density

1.14 g/cm³

Fillers

molybdenum disulfide

Data generated directly after machining
(standard climate Germany).

Main features

- good slide and wear properties
- high strength
- good wear properties
- high toughness
- resistant to many oils, greases and fuels
- improved surface hardness

Target Industries

- mechanical engineering
- textile industry
- automotive industry
- packaging and paper machinery
- conveyor technology
- clutch and engine manufacturing
- precision engineering

Mechanical properties

| | parameter | value | unit | norm | comment |
|---------------------------------------|--------------------------|---------|-------------------|--------------------|---------|
| Modulus of elasticity (tensile test) | 1mm/min | 3300 | MPa | DIN EN ISO 527-2 | 1) |
| Tensile strength | 50mm/min | 84 | MPa | DIN EN ISO 527-2 | |
| Tensile strength at yield | 50mm/min | 82 | MPa | DIN EN ISO 527-2 | |
| Elongation at yield | 50mm/min | 5 | % | DIN EN ISO 527-2 | |
| Elongation at break | 50mm/min | 37 | % | DIN EN ISO 527-2 | |
| Flexural strength | 2mm/min, 10 N | 110 | MPa | DIN EN ISO 178 | 2) |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 3100 | MPa | DIN EN ISO 178 | |
| Compression strength | 1% / 2% 5mm/min, 10 N | 17 / 32 | MPa | EN ISO 604 | 3) |
| Compression modulus | 5mm/min, 10 N | 2900 | MPa | EN ISO 604 | 4) |
| Impact strength (Charpy) | max. 7,5J | n.b. | kJ/m ² | DIN EN ISO 179-1eU | 5) |
| Notched impact strength (Charpy) | max. 7,5J | 5 | kJ/m ² | DIN EN ISO 179-1eA | |
| Ball indentation hardness | | 160 | MPa | ISO 2039-1 | 6) |

Thermal properties

| | parameter | value | unit | norm | comment |
|------------------------------|-----------------|-------|----------------------------------|----------------------|---------|
| Glass transition temperature | | 51 | °C | DIN 53765 | 1) |
| Melting temperature | | 220 | °C | DIN 53765 | |
| Service temperature | short term | 160 | °C | | 2) |
| Service temperature | long term | 100 | °C | | |
| Thermal expansion (CLTE) | 23-60°C, long. | 8 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1:2 | |
| Thermal expansion (CLTE) | 23-100°C, long. | 8 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1:2 | |
| Specific heat | | 1.6 | J/(g*K) | ISO 22007-4:2008 | |
| Thermal conductivity | | 0.37 | W/(K*m) | ISO 22007-4:2008 | |

Electrical properties

| | parameter | value | unit | norm | comment |
|------------------------------|---|------------------|-------|---------------|---------|
| Specific surface resistance | Silver electrode, 23°C, 12% r.h. | 10 ¹⁴ | Ω | DIN IEC 60093 | 1) |
| Specific volume resistance | Silver electrode, 23°C, 12% r.h. | 10 ¹⁴ | Ω*cm | DIN IEC 60093 | 2) |
| Dielectric strength | 23°C, 50% r.h. | 30 | kV/mm | ISO 60243-1 | 3) |
| Resistance to tracking (CTI) | Platin electrode, 23°C, 50% r.h., solvent A | 600 | V | DIN EN 60112 | |

Other properties

| | parameter | value | unit | norm | comment |
|--------------------------------|------------------|-----------|------|----------------------|---------|
| Water absorption | 24h / 96h (23°C) | 0.3 / 0.6 | % | DIN EN ISO 62 | 1) |
| Resistance to hot water/ bases | (+) | | - | | 2) |
| Resistance to weathering | (+) | | | | 3) |
| Flammability (UL94) | corresponding to | HB | | DIN IEC 60695-11-10; | |

- (1) Ø ca. 50mm, h=13mm
- (2) (+) limited resistance
- (3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.