

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
- automotive industry

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	84	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	3300	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	82	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	5	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	37	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	110	MPa	DIN EN ISO 178	2) n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	3100	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	17/32/79	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	
Shore hardness	D	79		DIN EN ISO 868	

Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		51	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		220	°C	DIN EN ISO 11357	(2) Found in public sources.
Service temperature	short term	160	°C		2) Individual testing regarding application conditions is mandatory.
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
surface resistivity	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	-	1) (1) Specimen in 20mm thickness
volume resistivity	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	-	2) (2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
Dielectric strength	23°C, 50% r.h.	30	kV/mm	ISO 60243-1	3) (3) Specimen in 1mm thickness
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) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		(+)		-	2) (2) (+) limited resistance
Resistance to weathering		(+)		-	3) (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.
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)

