Material data sheet
PA 6 GF30 black

Chemical Designation: Polyamide 6
DIN-abbreviation: PA 6
Colour / Fillers: black opaque / glass fibres
Density: 1,36 g/cm³

Data generated directly after machining (standard climate Germany).

Main features

- very high strength
- good wear properties
- high dimensional stability
- good machinability
- resistant to many oils, greases and fuels
- good weldable and bondable
- good heat deflection temperature

Target Industries

- mechanical engineering
- automotive industry
- electronics

Characteristics

mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1 mm / min	5700	MPa	DIN EN ISO 527-2 1)	1) For tensile test: specimen type 1b 2) For flexual test: span 64 mm, norm specimen. 3) Specimen 10 x 10 x 10 mm 4) Specimen 10 x10 x 50 mm, modulus range between 0,5 and 1% compression. 5) For Charpy test: support span 64 mm, norm specimen.
Tensile strength	50 mm / min	98	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm / min	98	MPa	DIN EN ISO 527-2	
Elongation at yield	50 mm / min	4	%	DIN EN ISO 527-2	
Elongation at break	50 mm / min	5	%	DIN EN ISO 527-2	
Flexural strength	2 mm / min, 10 N	140	MPa	DIN EN ISO 178 2)	
Modulus of elasticity (flexural test)	2 mm / min, 10 N	5200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5 mm / min, 10 N	21/42/107	MPa	EN ISO 604 3)	
Compression modulus	5 mm / min, 10 N	4200	MPa	EN ISO 604 4)	
Impact strength (Charpy)	max. 7,5 J	60	kJ/m²	DIN EN ISO 179-1eU 5)	
Shore hardness	D	84		DIN EN ISO 868	

Wilhelm Herm. Müller GmbH & Co. KG
Heinrich-Nordhoff-Ring 14 · 30826 Garbsen · Postfach 141230 · 30812 Garbsen
Tel. +49 5131 4522-0 · Fax: +49 5131 4522-110 · E-Mail: info@whm.net

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thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		49	°C	DIN EN ISO 11357 1)	1) Found in public sources. 2) Found in public sources.Individual testing regarding application conditions is mandatory.
Melting temperature		218	°C	DIN EN ISO 11357	
Service temperature	short term	180	°C	2)	
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60 °C, long	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100 °C, long	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2	
Specific heat		1.3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.41	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	DIN IEC 60093 1)	1) Specimen in 20 mm thickness 2) Due to the black colourant and moisture uptake oft he material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise 3) Specimen in 1 mm thickness
volume resistivity	Silver electrode, 23 °C, 12% r.h.	10^{14}	Ω*cm	DIN IEC 60093 2)	
Dielectric strength	23 °C, 50% r.h.	32	kV/mm	ISO 60243-1 3)	
Resistance to tracking (CTI)	Platin electrode, 23 °C, 50% r.h., solvent A	550/475	V	DIN EN 60112	

other properties	parameter	value	unit	norm	comment
Water absorption	24 h / 96 h (23 °C)	0.2 / 0.3	%	DIN EN ISO 62 1)	1) Ø ca. 50 mm, h = 13 mm 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.
Resistance to hot water/bases		(+)		- 2)	
Resistance to weathering		(+)			
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10 3)	

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