

### Chemical Designation

PA 6 (Polyamide 6)

### Colour

black opaque

### Density

1.36 g/cm<sup>3</sup> (\*2)

### Fillers

glass fibres, 30% glass fibres

### Main features

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

### Target Industries

- electronics
- automotive industry
- mechanical engineering

General material information	parameter	value	unit	norm	comment
Diameter		1,75 +/- 0,05	mm	-	(1) standard spool body
Spool measurements	holder	Ø 52	mm	-	(2) do not dry spool >120°C
Spool measurements	width	55	mm	-	(3) Ø 1,75mm
Spool measurements	outer diameter	Ø 200	mm	-	1)
Spool Material		Polycarbonate	-	-	2)
Filament Load per Spool		750	g	-	-
Filament Length per Spool		217	m	-	3)
Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	5mm/min, Orientation XY	71,7	MPa	DIN EN ISO 527-2	1) (1) (*5), (*6)
Tensile strength	5mm/min, Orientation XZ	84,1	MPa	DIN EN ISO 527-2	2) (2) (*5), (*6)
Tensile strength	5mm/min, Orientation ZX	22,3	MPa	DIN EN ISO 527-2	3) (3) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation XY	5215,0	MPa	DIN EN ISO 527-2	4) (4) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation XZ	6114,0	MPa	DIN EN ISO 527-2	5) (5) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation ZX	1435,8	MPa	DIN EN ISO 527-2	6) (6) (*5), (*6)
Elongation at yield (tensile test)	5mm/min, Orientation XY	4,1	%	DIN EN ISO 527-2	7) (7) (*5), (*6)
Elongation at yield (tensile test)	5mm/min, Orientation XZ	3,6	%	DIN EN ISO 527-2	8) (8) (*5), (*6)
Elongation at yield (tensile test)	5mm/min, Orientation ZX	3,2	%	DIN EN ISO 527-2	9) (9) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation XY	5,0	%	DIN EN ISO 527-2	10) (10) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation XZ	4,0	%	DIN EN ISO 527-2	11) (11) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation ZX	3,3	%	DIN EN ISO 527-2	12) (12) (*5), (*6)
Flexural strength	2mm/min, Orientation XY	115,0	MPa	DIN EN ISO 178	13) (13) (*5), (*6)
Modulus of elasticity (flexural test)	2mm/min, Orientation XY	4460,0	MPa	DIN EN ISO 178	14) (14) (*5), (*6)
Elongation at break (flexural test)	2mm/min, Orientation XY	6,0	%	DIN EN ISO 178	15) (15) (*5), (*6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		60	°C	ASTM D 3418	1) (1) (*2)
Melting temperature		220	°C	DIN EN ISO 11357	2) (2) (*2)
Deflection temperature	HDT-A	200	°C	ISO-R 75 Method A	3) (3) (*2)
Service temperature	short term	180	°C	-	4) (4) (*2)
Service temperature	long term	100	°C	-	5) (5) (*2)
Thermal expansion (CLTE)		6	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	6) (6) (*2)
Other properties	parameter	value	unit	norm	comment
Moisture absorption		0,3	%	DIN EN ISO 62	1) (1) (*2)
Melt flow index (MFI)		-	g/10 min	DIN EN ISO 1133	2) (2) (*2)
Processing parameter	parameter	value	unit	norm	comment
Nozzle temperature		260 - 290	°C	-	(1) not required
Max. melt temperature		300	°C	-	-
Print bed temperature		80 - 140	°C	-	-
Build chamber temperature		80 - 100	°C	-	1)
Nozzle diameter		0,4 - 0,6	mm	-	-
Print speed		30 - 50	mm/s	-	-
Fan speed		0	%	-	-
Pre drying	parameter	value	unit	norm	comment
Drying temperature		80	°C	-	1) (1) (*4)
Drying time		8	h	-	-

