

Chemical Designation

PA 6 C (Cast polyamide 6)

Colour

ivory opaque

Density

1.15 g/cm³

Data generated directly after machining (standard climate Germany).

Main features

- good damping
- good slide and wear properties
- electrically insulating
- high strength
- good wear properties
- resistant to many oils, greases and fuels
- high toughness

Target Industries

- mechanical engineering
- food technology
- oil and gas industry
- automotive industry
- heavy duty industry

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	83	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	3500	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	80	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	40	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	109	MPa	DIN EN ISO 178	n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	3200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10N	19/36/83	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	4	kJ/m ²	DIN EN ISO 179-1eA	
Shore hardness	D	83		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		40	°C	DIN EN ISO 11357	(1) Found in public sources.
Melting temperature		215	°C	DIN EN ISO 11357	(2) Found in public sources.
Service temperature	short term	170	°C		Individual testing regarding application conditions is mandatory.
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1.7	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.38	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 ¹⁴	Ω	DIN IEC 60093	
volume resistivity		10 ¹⁴	Ω*cm	DIN IEC 60093	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.2 / 0.4	%	DIN EN ISO 62	(1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		(+)		-	(2) (+) limited resistance
Resistance to weathering		-		-	(3) - poor resistance
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	(4) 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.

