TECAMID 6 natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PA 6 (Polyamide 6)

Colour
ivory opaque

Density
1.14 g/cm^3

Main features
- high toughness
- resistant to many oils, greases and fuels
- electrically insulating
- good wear properties
- good weldable and bondable
- high strength
- good machinability

Target Industries
- mechanical engineering
- aircraft and aerospace technology
- electronics
- food technology
- automotive industry

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	5mm/min	70	MPa	ASTM D 638		(1) For tensile test: specimen type 1 (2) Specimen Diam. 18x50mm (3) For Charpy test: support span 64mm, norm specimen. n.b. = not broken (4) notch type A (5) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	5mm/min	2800	MPa	ASTM D 638	1)	
Elongation at break (tensile test)	5mm/min	40	%	ASTM D 638		
Flexural strength	5mm/min	39	MPa	ASTM D 790		
Modulus of elasticity (flexural test)	5mm/min	3800	MPa	ASTM D 790		
Compression strength	1,3mm/min	81	MPa	ASTM D 695	2)	
Compression modulus	1,3mm/min	2300	MPa	ASTM D 695		
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	3)	
Notched impact strength (Charpy)	2,9m/s	9,45	kJ/m^2	DIN EN ISO 179-1eA	4)	
Ball indentation hardness		155	MPa	ISO 2039-1	5)	
Shore hardness	Shore D	72		ASTM D 2240		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		53	°C	DIN 53765		(1) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		221	°C	DIN 53765		
Service temperature	short term	160	°C	-	1)	
Service temperature	long term	100	°C	-		
Thermal expansion (CLTE)	23-60°C, long.	9,7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	10,8	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		4,26x10^{14}		ASTM D 257		(1) Specimen in 1mm thickness
volume resistivity		7,20x10^{15}		ASTM D 257		
Dielectric strength	23°C, 50% r.h.	31	kV/mm	ISO 60243-1	1)	
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)	1 / 2,02	%	ASTM D 570	1)	(1) Ø ca. 50,8mm, h=3,3mm (2) (+) limited resistance (3) - poor resistance (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.
Resistance to hot water/ bases		(+)		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)	

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Date: 2017/06/01

Version: AA