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

## **Chemical Designation**

PA 6 (Polyamide 6)

Colour ivory opaque

Density

1.14 g/cm<sup>3</sup>

Data generated directly after machining (standard climate Germany).

## Main features

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

## Target Industries

- mechanical engineering
- → aircraft and aerospace technology
- → electronics
- → food technology
- → automotive industry

Tensile strength50mm/min79MPaDIN EN ISO 527-2 DIN EN ISO 527-2(1) For tansile test: specimen (2) For flexural test: support spacement (2) For flexural test	Mechanical properties	parameter	value	unit	norm		comment	
Modulus of elasticity (tensile test)Immin (tensile test)3300MPa (tensile test)Dink EN ISO 527-2 (tensile test)(2) For flexural test: support span 64m, norm specimen, (1) Specimen 10x10x10mm (4) Specime 10x10x20mm, (4) Specime 10x10x20mm, (4	Tensile strength	50mm/min	79	MPa	DIN EN ISO 527-2		type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen.	
Terme startingCommunityToInitialCommunityCommonCommonComputer startingCompositionCompation at break (tensile test)Somm/min130%DIN EN ISO 527-2Computer startingComputer startingComputer startingCommonComputer startingCommon<		1mm/min	3300	MPa	DIN EN ISO 527-2	1)		
Elongation at yield (tensile test)50mm/min49%DIN EN ISO 527-2indiulus range between 0.5Elongation at break (tensile test)50mm/min130%DIN EN ISO 527-2indiulus range between 0.5Heural strength2mm/min, 10 N100MPaDIN EN ISO 5782)indiulus range between 0.5Modulus of elasticity2mm/min, 10 N2900MPaDIN EN ISO 1782)indiulus range between 0.5Compression strength1% / 2% / 5%24/41/86MPaEN ISO 6043)Compression modulus5mm/min, 10 N2700MPaEN ISO 6044)Inpact strength (Charpy)max. 7,5Jn.b.kJ/m²DIN EN ISO 179-16AShore hardnessD79DIN EN ISO 179-16A5)Notched impact strength (Charpy)max. 7,5J7kJ/m²DIN EN ISO 179-16AShore hardnessD79DIN EN ISO 11357(1)(2) Found in public sources.Glass transition temperature45<'C	Tensile strength at yield	50mm/min	78	MPa	DIN EN ISO 527-2	_		
Elongation at Dreak (lensite test)Softmitmin1.30 $\gamma_{6}$ UN KINSO 52/-2(5) For Charpy test supportPlexural strength2mm/min, 10 N100MPaDIN EN ISO 1782)span 64mn, rom specimen. $h,b$ = not brokenModulus of elasticity2mm/min, 10 N2900MPaDIN EN ISO 1782) $span 64mn, rom specimen.$ $h,b$ = not brokenCompression strength1% / 2% / 5%24/41/86MPaEN ISO 6044) $h,b$ = not brokenCompression strength5mm/min, 10 N2700MPaEN ISO 6044)Impact strength (Charpy)max. 7.5Jn.b. $kJ/m^2$ DIN EN ISO 179-164Notched impact strength (Charpy)max. 7.5J7 $kJ/m^2$ DIN EN ISO 179-164Thermal propertiesparametervalueunitnormGlass transition temperature45°CDIN EN ISO 11357(1)Melting temperatureshort term100°C2)Service temperaturelong term100°C2)Service temperaturelong term100°C2)Specific heat1.6J/(g*K)ISO 22007-4:2008commentThermal conductivitySilver electrode, 23°C, 101 <sup>4</sup> Q-1)(1) Specimen in 20mm thicknessVolume resistivitySilver electrode, 23°C, 600VDIN EN ISO 11359-1:22)Specific heat1.6J/(g*K)ISO 22007-4:20082)2)Ibelectric strength23°C, 50% r.h.31KV/mm	Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2			
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Modulus of elasticity (flexural test)2mm/min, 10 N2900MPaDIN EN ISO 178Compression strength $1\%/2\%/5\%$ Smm/min, 10 N24/41/86MPaEN ISO 6043)Compression modulus5mm/min, 10 N2700MIPaEN ISO 6044)Impact strength (Charpy)max. 7,5Jn.b.kJ/m²DIN EN ISO 179-1eU5)Notched impact strength (Charpy)max. 7,5J7KJ/m²DIN EN ISO 8687Thermal propertiesparametervalueunitnormcommentGlass transition temperature221°CDIN EN ISO 113571)(1) Found in public sources, individual testing regarding aparameterService temperaturelong term100°C2)Service temperaturelong term100°C2)Thermal expansion (CLTE)23-60°C, long.1210 <sup>-5</sup> K <sup>-1</sup> DIN EN ISO 11359-1.2Thermal expansion (CLTE)23-100°C, long.1310 <sup>-5</sup> K <sup>-1</sup> DIN EN ISO 11359-1.2Specific heat1.6J/(g*K)ISO 22007-4:2008mandatory.Electrical propertiesparametervalueunitnormcommentSurface resistivitySilver electrode, 23°C, 50% r.h.10 <sup>14</sup> Q-1)Dielectric strength24' 96h (23°C)0.3 / 0.6%DIN EN 60112Other propertiesparametervalueunitnormcommentUsing the electrode, 23°C, top0.3 / 0.6%DIN EN 602.11)O	Flexural strength	2mm/min, 10 N	100	MPa	DIN EN ISO 178	2)		
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	Specific heat		1.6	J/(g*K)	ISO 22007-4:2008			
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12% r.h.12% r.h.31kV/mmISO 60243-12)Dielectric strength23°C, 50% r.h.31kV/mmISO 60243-12)Resistance to tracking (CTI)Platin electrode, 23°C, 50% r.h., solvent A600VDIN EN 60112Other propertiesparametervalueunitnormcommentWater absorption24h / 96h (23°C)0.3 / 0.6%DIN EN ISO 621)(1) Ø ca. 50mm, h=13mm (2) (+) limited resistanceResistance to hot water/ bases(+)2)(3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken	surface resistivity			Ω	-	1)	thíckness (2) Specimen in 1mm	
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)   (4) Corresponding means no listing at UL (yellow card). The information might be taken     Flammability (UL94)   corresponding to   HB   DIN IEC 60695-11-10;   4)	volume resistivity		10 <sup>14</sup>	Ω*cm	-			
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)   (4) Corresponding means no listing at UL (yellow card). The information might be taken	Dielectric strength	23°C, 50% r.h.	31	kV/mm	ISO 60243-1	2)		
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)   (3) - poor resistance     Resistance to weathering   -   -   3)   (4) Corresponding means no listing at UL (yellow card). The information might be taken	Resistance to tracking (CTI)		600	V	DIN EN 60112			
Resistance to hot water/ bases   (+)   -   2)   (2) (+) limited resistance     Resistance to weathering   -   2)   (3) - poor resistance   (3) - poor resistance     Flammability (UL94)   corresponding to   HB   DIN IEC 60695-11-10;   4)   information might be taken	Other properties	parameter	value	unit	norm		comment	
Resistance to hot water/ bases (+) - 2) (3) - poor resistance   Resistance to weathering - - 3) (4) Corresponding means no listing at UL (yellow card). The information might be taken   Flammability (UL94) corresponding to HB DIN IEC 60695-11-10; 4) information might be taken	Water absorption	24h / 96h (23°C)	0.3 / 0.6	%	DIN EN ISO 62	1)	(2) (+) limited resistance (3) - poor resistance	
Flammability (UL94)   corresponding to   HB   DIN IEC 60695-11-10;   4)   information might be taken	Resistance to hot water/ bases		(+)		-	2)		
Flammability (UL94) corresponding to HB DIN IEC 60695-11-10; 4) information might be taken	Resistance to weathering		-		-	3)		
estimation. Individual testing	Flammability (UL94)	corresponding to	НВ		DIN IEC 60695-11-10;	4)	information might be taken from resin, stock shape or	

estimation. Individual testing regarding application conditions is mandatory

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Manufactured by: Ensinger Group, a German based plastic manufacturer

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Version: AD