

## TECAMID TR

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Chemical Designation:	Polyamide 6 – 3 – T ( Nylon 6 – 3 – T )
DIN Abbreviation:	PA 6 – 3 – T
Colour, Filler:	Light yellowish, transparent

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TECAMID TR is an amorphous engineering thermoplastic with high toughness and transparency as well as good chemical and electrical properties

- Main characteristics:
- Transparent (when machined and polished)
  - Tough and strong
  - Resistant to dilute acids, cleaning agents
  - High stress cracking resistance
  - Easily machined and polished
  - Good electrical insulation
  - Good heat deformation resistance

Preferred fields: Electrical engineering, mechanical engineering, model building, automotive engineering, transport and conveyor technology, precision engineering, household appliances, food technology, medical technology, photo technology

- Applications:
- Switch parts
  - Insulators
  - Plug strips
  - Masking covers
  - Photo couplers
  - Housing parts
  - Plugs
  - Sight glasses
  - Optical structural elements
  - Transparent functional models

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# TECAMID TR

The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	Dry / wet*
<b>Mechanical</b>			
Density	g/cm <sup>3</sup>	527 / D 792	1.12
Tensile strength at yield	MPa	527 / D 638	90
Tensile strength at break	MPa	527 / D 638	
Elongation at break	%	527 / D 638	>50
Modulus of elasticity in tension	MPa	527 / D 638	2800
Modulus of elasticity in flexure	MPa	178 / D 790	
Ball indentation hardness	MPa	2039 / 1	100
Impact strength	kJ/m <sup>2</sup>	179 / D 256	no. br.
Creep rupture strength after 1000 hrs with static load	MPa		50
Time yield limit for 1% elongation after 1000 hrs.	MPa		12
Coefficient of friction against hardened and ground steel p = 0,05 N/mm <sup>2</sup> , v = 0,6 m/s	-		
Wear conditions as above	µm/km		
<b>Thermal</b>			
Crystalline melting point	°C	DIN 53 736	
Glass transition temperature	°C	DIN 53 736	150
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	130 140

Properties	Unit	Test method DIN EN ISO / ASTM	Dry / wet*
<b>Thermal</b>			
Max. service temperature short term long term	°C °C		120 100
Coefficient of thermal conductivity	W/(m · K)		0.23
Specific heat	J/(g · K)		1.45
Coefficient of thermal expansion	10 <sup>-5</sup> /K	DIN 53 483 / D 696	5
<b>Electrical</b>			
Dielectric constant at 10 <sup>5</sup> Hz		DIN 53 483	3-4
Dielectric loss factor at 10 <sup>5</sup> Hz		DIN 53 483	0.02-0.03
Specific volume resistance	Ω · cm	DIN 60093	10 <sup>15</sup>
Surface resistance	Ω	DIN 60093	10 <sup>15</sup>
Dielectric strength 1 mm	kV/mm	ASTM 149	25
Tracking resistance		53 480	KC > 600
<b>Miscellaneous</b>			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	3
Water absorption at saturation at 23 °C	%	62	5.6 - 6.4
Resistance to hot water, washing soda			limited resistance
Flammability according to UL standard 94			HB
Resistance to weathering			not resistant

\* after storage in a standard 23/50 atmosphere (DIN 50 014) to equilibrium

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts. Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg. glass, carbon and aramid fibre, talc, MoS<sub>2</sub>, graphite, PTFE, PE, silicone oil, internal lubrication