

TECAMID 66

Chemical Designation:	Polyamide 66 (Nylon 66)
DIN Abbreviation:	PA 66
Colour, Filler:	Opaque

TECAMID 66 is a semi-crystalline engineering thermoplastic with universal applications.

- Main characteristics:
- Good sliding properties
 - Very abrasion resistant
 - Resistant to many oils, greases, diesel, petrol, cleaning fluids
 - Strong and tough
 - Rigid
 - Electrically insulating
 - Easily machined
 - Easily welded and bonded

Preferred fields: Mechanical engineering, automotive engineering, transport and conveyor technology, textile, packaging and paper processing machinery, printing and drinks dispensing machinery, household articles, electrical engineering, building machinery, agricultural machinery

- Applications:
- Gear wheels
 - Friction strips
 - Bushes, spindle nuts
 - Piston guides
 - Castors
 - Impact plates
 - Friction bearings
 - Conveyor screws
 - Cam discs
 - Rope pulleys
 - Plug parts
 - Damping plates

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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*
Mechanical			
Density	g/cm ³	527 / D 792	1.14
Tensile strength at yield	MPa	527 / D 638	80 / 60*
Tensile strength at break	MPa	527 / D 638	
Elongation at break	%	527 / D 638	40 / 150*
Modulus of elasticity in tension	MPa	527 / D 638	3100 / 2000*
Modulus of elasticity in flexure	MPa	178 / D 790	2830
Ball indentation hardness	MPa	2039 / 1	170 / 100*
Impact strength	kJ/m ²	179 / D 256	no. br..
Creep rupture strength after 1000 hrs with static load	MPa		55
Time yield limit for 1% elongation after 1000 hrs.	MPa		8
Coefficient of friction against hardened and ground steel $\rho = 0,05 \text{ N/mm}^2$, $v = 0,6 \text{ m/s}$	–		0.35 - 0.42
Wear conditions as above	$\mu\text{m/km}$		0.9
Thermal			
Crystalline melting point	°C	DIN 53 736	260
Glass transition temperature	°C	DIN 53 736	72 / 5*
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	100 >200

Properties	Unit	Test method DIN EN 150 / ASTM	Dry / Wet*
Thermal			
Max. service temperature short term long term	°C °C		170 100
Coefficient of thermal conductivity	W/(m · K)		0.23
Specific heat	J/(g · K)		1.7
Coefficient of thermal expansion	10 ⁻⁵ /K	DIN 53 483 / D 696	8
Electrical			
Dielectric constant at 10 ⁵ Hz		DIN 53 483	3.6 – 5.0
Dielectric loss factor at 10 ⁵ Hz		DIN 53 483	0.026 – 0.200
Specific volume resistance	$\Omega \cdot \text{cm}$	DIN 60093	10 ¹²
Surface resistance	Ω	DIN 60093	10 ¹⁰
Dielectric strength 1 mm	kV/mm	ASTM 149	28 / 30
Tracking resistance		53 480	CTI 600
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	2.8
Water absorption at saturation at 23 °C	%	62	8.5
Resistance to hot water, washing soda			limited resistance
Flammability according to UL standard 94			V2 (3mm)
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, MoS₂, graphite, PTFE, PE, silicone oil, internal lubrication