

TECAMID 11

Chemical Designation: Polyamide 11
(Nylon 11)

DIN Abbreviation: PA 11

Colour, Filler: Opaque

TECAMID 11 is a semi-crystalline engineering plastic with very high toughness and good chemical resistance for varied applications

Main characteristics:

- Extremely tough
- Good sliding properties
- Abrasion resistant
- Good chemical resistance to many oils, greases, diesel, petrol, cleaning fluids
- Low density
- Low water absorption
- Good electrical insulation
- Easily machined
- Dimensionally accurate
- Easily bonded

Preferred fields: Transport and conveyor technology, food technology, textile packaging and paper processing machinery, printing and drinks dispensing machinery, household articles, electrical engineering, precision engineering, automotive engineering

Applications:

- Conveyor screw sleeves
- Friction strips
- Gear wheels
- Fan impellers
- Castors
- Impact plates
- Vibration parts
- Friction bearings
- Housing parts
- Switch parts
- Plug parts
- Bumper stops

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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	1.04
Tensile strength at yield	MPa	527 / D 638	40 / 42*
Tensile strength at break	MPa	527 / D 638	
Elongation at break	%	527 / D 638	230 / 280*
Modulus of elasticity in tension	MPa	527 / D 638	1000
Modulus of elasticity in flexure	MPa	178 / D 790	
Ball indentation hardness	MPa	2039 / 1	90
Impact strength	kJ/m ²	179 / D 256	No. br..
Creep rupture strength after 1000 hrs with static load	MPa		23
Time yield limit for 1% elongation after 1000 hrs.	MPa		3.5
Coefficient of friction against hardened and ground steel p = 0,05 N/mm ² , v = 0,6 m/s	–		0.32 - 0.38
Wear conditions as above	µm/km		0.8
Thermal			
Crystalline melting point	°C	DIN 53 736	183
Glass transition temperature	°C	DIN 53 736	43
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	55 150

Properties	Unit	Test method DIN EN 150 / ASTM	Dry / Wet*
Thermal			
Max. service temperature short term long term	°C °C		150 80
Coefficient of thermal conductivity	W/(m · K)		0.23
Specific heat	J/(g · K)		2.1
Coefficient of thermal expansion	10 ⁻⁵ /K	DIN 53 483 / D 696	10
Electrical			
Dielectric constant at 10 ⁵ Hz		DIN 53 483	3.2 - 3.6
Dielectric loss factor at 10 ⁵ Hz		DIN 53 483	0.03 - 0.08
Specific volume resistance	Ω · cm	DIN 60093	10 ¹³ - 2 x 10 ¹⁵
Surface resistance	Ω	DIN 60093	10 ¹⁴
Dielectric strength 1 mm	kV/mm	ASTM 149	40
Tracking resistance		53 480	KC 600
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	0.9
Water absorption at saturation at 23 °C	%	62	1.9
Resistance to hot water, washing soda			resistant
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, MoS₂, graphite, PTFE, PE, silicone oil, internal lubrication