TECAMID 12 GF 30

Chemical Designation:	Polyamide 12 (Nylon 12)
DIN Abbreviation:	PA 12 GF 30
Colour, Filler:	Opaque 30% glass fibres

TECAMID 12 GF 30 is a 30% glass fibre reinforced semi-crystalline engineering plastic with very high toughness and good chemical resistance for varied applications

Main characteristics:

- Tough and strong
- Excellent wear resistance
- Good chemical resistance to many oils, greases, diesel, petrol, cleaning fluids
- Low water absorption
- Good electrical insulation
- Dimensionally stable
- Easily machined
- Easily bonded

Preferred fields: Electrical engineering, precision engineering, construction, automotive engineering, transport and conveyor technology, textile, packaging and paper machinery, printing machinery, household appliances

Applications:

- Housing parts
- Fan impellers
- Castors
- Impact plates
- Catalyst supports
- Switch parts
- 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/cm³	527 / D 792	1.24
Tensile strength at yield	MPa	527 / D 638	
Tensile strength at break	MPa	527 / D 638	105
Elongation at break	%	527 / D 638	6
Modulus of elasticity in tension	MPa	527 / D 638	5900
Modulus of elasticity in flexure	MPa	178 / D 790	
Hardness Rockwell	MPa	2039 /1	113R
Impact strength	kJ/m²	179 / D 256	70
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		28
Coefficient of friction against hardened and ground steel p = 0,05 N/mm², v = 0,6 m/s	–		
Wear conditions as above	µm/km		
Thermal			
Crystalline melting point	°C	DIN 53 736	175
Glass transition temperature	°C	DIN 53 736	45
Heat distortion temperature Method A Method B	 °C °C	 R 75 R 75	 120 165

Properties	Unit	Test method DIN EN 1S0 / ASTM	Dry / wet*
Thermal			
Max. service temperature short term long term	 °C °C		 150 110
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	5
Electrical			
Dielectric constant at 10^5 Hz		DIN 53 483	4
Dielectric loss factor at 10^5 Hz		DIN 53 483	<0.04
Specific volume resistance	Ω · cm	DIN 60093	10^{13}
Surface resistance	Ω	DIN 60093	10^{14}
Dielectric strength 1 mm	kV/mm	ASTM 149	>45
Tracking resistance		53 480	KB 400 CTI 600
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	0.4
Water absorption at saturation at 23 °C	%	62	1
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_2, graphite, PTFE, PE, silicone oil, internal lubrication