

TECAMID 46

Chemical Designation :

DIN-Abbreviation:

Colours, fillers:

Polyamide 46

PA 46

red

Main features

high thermal and mechanical capacity	very rigid
creep resistant	–
resistant to many oils, greases, diesels and petrol	wear resistant
good sliding properties	easily machined
electrically insulating	

Preferred Fields

mechanical engineering	automotive engineering
transport and conveyor technology	electrical engineering
precision engineering	textile machinery
packaging and paper processing machinery	

Applications

Gears, sliding rails, frictions bearings, seals, pistons, friction rings, structural parts

Properties

Mechanical

Tensile strength at yield

Elongation at yield

Tensile strength at break

dry / moist

100 / 65

MPa

%

MPa

standard

DIN EN ISO 527

Elongation at break	40 / 280	%	DIN EN ISO 527
Modulus of elasticity in tension	3300 / 1200	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test		MPa	
Hardness	90		DIN 53 505 (Shore Härte D)
Impact strength 23° C (Charpy)	n.b.	KJ/m ²	DIN EN ISO 179 (Charpy)
Creep rupture strength after 1000 h with static load		MPa	
Time yield limit for 1% elongation after 1000 h		MPa	
Co-efficient of friction p = 0,05 N/mm ² v=0,6 m/s on steel, hardened and ground	0,20–0,45		
Wear p = 0,05 N/mm ² v=0,6 m/s on steel, hardened and ground		µm/km	

Thermal	dry / moist		standard
Crystalline melting point	295	°C	
Glass transition temperature	75	°C	DIN 53 765
Heat distortion temperature HDT, Method A	160	°C	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B		°C	
Max. service temperature			
short term	220	°C	
long term	130	°C	
Thermal conductivity (23° C)	0,3	W/(K·m)	
Specific heat (23° C)	2,1	J/g.K	
Coefficient of thermal expansion (23–55°C)	8	10 ⁻⁵ 1/K	DIN 53 752

Properties

Electrical	dry / moist		standard
Dielectric constant (10^6 Hz)	9,4	–1,1 / 9,4	DIN 53 483, IEC–250
Dielectric loss factor (10^6 Hz)	0,21	–0,35	DIN 53 483, IEC–250
Specific volume resistance	10^{15}	$\Omega \cdot \text{cm}$	DIN IEC 60093
Surface resistance	10^{16}	Ω	DIN IEC 60093
Dielectric strength	> 20	kV/mm	DIN 53 481, IEC–243, VDE 0303 Teil 2
Resistance to tracking	KC>425		DIN 53 480, VDE 0303 Teil 1

Miscellaneous	dry / moist		standard
Density	1,18	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)	3,7	%	DIN EN ISO 62
Water absorption to equilibrium	14	%	DIN EN ISO 62
Flammability acc. to UL standard 94	V2		

(1) Testing of semi-finished products

The above information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of chemical resistance, of certain properties and the suitability of our products and their applications. Our products are not destined for use in medical and dental implants. Existing commercial patents must be observed. Unless otherwise stated, these values represent averages taken from injection moulding samples, dry as moulded. We reserve the right to make technical alterations.
