

► Main features

High performance thermoplastic material, excellent use in extreme conditions of temperature, stress and wear. It is not flammable and retains its tensile, bending and compressive properties up to 250 °C. It has good resistance to chemical agents, radiation and saline environment.

► Applications

Bearings
Blades
Spacers
Structural components
Gears and mechanics details in general

► Application sectors

Aerospace
Medical and Pharmaceutical
Chemical
Power Plant, Offshore, Oil & Gas
Food Mechanic
Automotive
Electrical and Semiconductor

► FDA Compatibility YES

► Available colours



PHYSICAL PROPERTIES

PHYSICAL PROPERTIES		REGULATIONS	UM	PEEK
Density	DIN53479	g/cm ³	1.32	
Water absorption (50% at 23 °C)	**DIN53495	%	0.5	
Maximum temp. for use in the air for short duration	-	°C	300	
Maximum temperature of use in continuous air	-	°C	260	
Minimum temperature of use in continuous air	-	°C	-40	

MECHANICAL PROPERTIES

MECHANICAL PROPERTIES	REGULATIONS	UM	PEEK
Yield stress/tensile strength (σ_s)	ISO527	N/mm ²	110
Elongation at break (ϵ_s)	DIN53455	%	4.9
Breaking load (σ_r)	DIN53455	N/mm ²	-
Elongation at break (ϵ_r)	ISO527	%	20
Impact resistance	*DIN53453	kJ/m ²	NR
Impact resistance, notched test	ISO179	kJ/m ²	4
Rockwell hardness	DIN53465	Scala M	M99
Compression test, load 1% deform. nominal	*DIN53454 ⁽³⁾	N/mm ²	130
Elasticity module	*DIN53457 ⁽⁵⁾	N/mm ²	4200

THERMIC PROPERTIES

THERMIC PROPERTIES	REGULATIONS	UM	PEEK
Melting temperature	-	°C	340
VICAT softening temperature	DIN53460	°C	-
Deformation temperature under bending load	DIN53461	°C	160
Coefficient of linear thermal expansion (α)	DIN53752	K ⁻¹ X10 ⁻⁴	0.47
Thermal conductivity at 23°	DIN52612	W/(Kxm)	0.25

ELECTRICAL PROPERTIES

ELECTRICAL PROPERTIES	REGULATIONS	UM	PEEK
Volume resistivity	**DIN53482	Ω/cm	10 ¹⁵
Surface resistivity	**DIN53482	Ω	10 ¹⁵
Dielectric constant at 10 ³ Hz (on thickness of 1 mm.)	**DIN53483	-	3.2
Dielectric dissipation factor ($\tan \delta$) a 10 ³ Hz	**DIN53483	-	0.002
Dielectric strength (on thickness of 1 mm.)	**DIN53481	kV/mm	>15
Electrical leakage resistivity	112/030TI	-	CTI150

OTHER PROPERTIES

OTHER PROPERTIES	REGULATIONS	UM	PEEK
Possibility of gluing	-	-	Yes
Absence of physiological risks	FDA	-	Yes
Dry friction coefficient on steel	DIN53375	-	0.34
Flammability	UL94	-	V-0
UV stability	-	-	Limited

* : MEASUREMENTS ON TEST TUBES IN ANHYDROUS STATE

(3): ON CYLINDERS Ø 12X30 MM
(5): TRACTION SPEED 1 MM / MIN

(4): TRACTION SPEED 5 MM/MIN
(6): TRACTION SPEED 20 MM/MIN