DEXNYL© PEEK Nat. SF_1

Data Sheet

Properties	Symbol	Unit	Standard	Value
Information				
Material code	-	-	Internal Standard	
Colour	-	-	-	Beige
Density	ρ	kg/dm³	ISO 1183	1,30
Mechanical				
Compressive modulus	Ec	MPa	DIN EN ISO 604	4270
Elastic limit	σ_{el}	MPa	Internal Standard	120
Comprssive stress at yield	σ_y	MPa	DIN EN ISO 604	n.v.
Compressive strength	σ_M	MPa	DIN EN ISO 604	n.v.
Compressive stress at 3,5% strain	$\sigma_{3,5\%}$	MPa	DIN EN ISO 604	32
Compressive strength (0,01 h)	σ_M	MPa	Internal Standard	120
Compressive strength (100 h)	σ_M	MPa	Internal Standard	107
Compressive strength (10000 h)	σ_M	MPa	Internal Standard	58
Compressive stress at break	σ_B	MPa	DIN EN ISO 604	K.Br.
Elastic compression limit	ε_{el}	%	Internal Standard	8,8
Nominal compressive yield strain	ε_{cy}	%	DIN EN ISO 604	3,2
Nominal compressive strain at compressive strength	ε_{cM}	%	DIN EN ISO 604	6,9
Nominal compressive strain at break	ε_{cB}	%	DIN EN ISO 604	K.Br.
Modulus in tension (tensile modulus)	E_t	MPa	DIN EN ISO 527	3600
Elastic limit	σ_{el}	MPa	Internal Standard	81
Tensile stress at yield	σ_Y	MPa	DIN EN ISO 527	110
Tensile strength	σ_M	MPa	DIN EN ISO 527	110
Tensile stress at break	σ_B	MPa	DIN EN ISO 527	84
Elastic yield point	ε_{el}	%	Internal Standard	4,2
Yield strain	ε_y	%	DIN EN ISO 527	7
Elongation at maximum force	ε_M	%	DIN EN ISO 527	7
Tensile elongation at break	ε_B	%	DIN EN ISO 527	12,6
Modulus in flexure	E_f	MPa	DIN EN ISO 178	4000
Outer fibre stress at 3,5% outer fibre strain	$\sigma_{f3,5}$	MPa	DIN EN ISO 178	126
Flexural strength	σ_{fM}	MPa	DIN EN ISO 178	168
Flexural stress at break	σ_{fB}	MPa	DIN EN ISO 178	k.Br.
Elongation at flexural yield stress	ε_M	%	DIN EN ISO 178	6,3
Flexural elongation at break	ε_B	%	DIN EN ISO 178	k.Br.
Creep modulus at 1% deformation after 1000 h	E	N/mm²	DIN 53444	4300
Stress at 1% deformation after 1000 h	$\sigma_{1\%}$	N/mm²	DIN 53444	43
Creep resistance	-	-	Relative value	❻
Ball indetation hardness H358/30 (H132/30) [H49/30]	HB	N/mm²	DIN 2039	174
Shore A hardness	-	Shore	DIN 53505	93
Shore D hardness	-	Shore	DIN 53505	81
Impact strength Charpy not notched	-	kJ/m²	EN ISO 179/1eU	k.Br.
Impact strength Charpy notched	-	kJ/m²	EN ISO 179/1eA	8,0
Loss tangent (1Hz)	tanδ	1	Internal Standard	0,052
Fatigue strength at 20°C, 106 stress cycles, 1 Hz	-	MPa	Internal Standard	60
Thermal				
Continuous operating temperature (long therm)	RTi	°C	UL 746B	250
Short term operating temperature (3 h)	-	°C	Internal Standard	260
Maximum RTi temperature for bushings when pressed	-	°C	Internal Standard	100
Melting temperature	T_m	°C	DSC	340
Glass transition temperature	Tg	°C	DSC	146
Coefficient of thermal expansion up to 100°C	α	10^{-5}/K	ISO E830	5,1
Coefficient of thermal expansion up to 150°C	α	10^{-5}/K	ISO E831	5,9
Heat distortion temperature HDT/A 1,8 M Pa	HDT (A)	°C	DIN EN ISO 75	160
Thermal conductivity	λ	W/(m*K)	DIN 52612	0,25
Specific heat capacity	C_P	KJ/(Kg*K)	DSC	1,35
Fire behaviour (3,2 mm) UL94	-	-	UL 94 HB	V-0
Limiting oxygen index (LOI)	%	LOI	DIN EN ISO 4589	35

Properties	Symbol	Unit	Standard	Value
Electrical				
Volume resistivity	R_D	Ω*cm	IEC 60093	5E16
Surface resistance	R_O	Ω	IEC 60093	2,8E12
Penetration resistance	E	kV/mm	IEC 243	22,5
Tracking resistance	-	V	IEC 112	150
Dielectric constant (110Hz)	-	1	IEC 250	3,2
Dissipation factor (110Hz)	tanδ	1	IEC 112	0,003
pv Values				
Max. surface pressure v=1m/min	P_{zul}	N/mm²	Internal test radial bushing	19,12
Max. surface pressure v=10m/min	P_{zul}	N/mm²		2,88
Max. surface pressure v=100m/min	P_{zul}	N/mm²		0,11
Max. surface pressure v=200m/min	P_{zul}	N/mm²		0,05
Evolution of heat with v=1m/min	-	°C		84
Evolution of heat with v=10m/min	-	°C		158
Evolution of heat with v=100m/min	-	°C		153
Evolution of heat with v=200m/min	-	°C		83
Friction				
μ static 20°C dry operation	$\mu_{stat.}$	1	Internal Standard inclined plane	0,09
μ dynamic 20°C dry operation	$\mu_{dyn.}$	1		0,07
μ dynamic 100°C dry operation	$\mu_{dyn.}$	1		0,06
Wear				
Wear factor at 20°C	-	mm/100 km	Internal test periodic translative movement under load	0,15
Wear factor at 100°C	-	mm/100 km		0,89
Wear factor at 200°C	-	mm/100 km		0,53
Wear factor at 240°C	-	mm/100 km		0,66
Available as				
Tubes (hollow rods)	-	-	-	☑
Sheets	-	-	-	☑
Rods	-	-	-	☑
Plastic granules	-	-	-	☑
Injection moulded parts	-	-	-	☑
Machined parts	-	-	-	☑
Precision				
Dimensional stability with moisture absorption	-	-	Relative value	❿
Water absorption 23°C / RMC 93%	-	%	DIN EN ISO 62	0,05
Water absorption until an equilibrium moisture content	-	%	DIN EN ISO 62	0,5
Dimensional stability with temperature variation	-	-	Relative value	❻
High precision bushings (negative clearance)	-	-	-	☑
Alignment adjustment	-	-	Relative value	❹
Environmental influences				
Suitable for use in water	-	-	-	☑
Resistance against hot water	-	°C	-	200
Resistance against dust, dirt, abrasive substances	-	-	Relative value	❼
UV rays resistance	-	-		❾
Suitable for outdoor use	-	-		❻
Resistance to chemicals	-	-		❾
FDA compliant	-	-	-	☑
Suitable for vaccum	-	-	-	☑
Rate of desorption	a_{1h}	mbar*l (s/cm²)	-	-
ROHS / WEEE	-	-	-	☑
Free from silicone	-	-	-	☑
Free from PTFE	-	-	-	☑
Sterilization				
Resistance against disinfectant	-	-	-	☑
Moist heat sterilization	-	-	Relative value	❿
Gamma-rays radiation sterilization	-	-		❿
Chemical sterilization	-	-		❿
UV-sterilization	-	-		❼

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All the tests have been conducted with a standard conditioning atmosphere of 23°C (at the moment no other temperature is available). All the test specimens were made through extrusion process. The specified values are established from average values of several tests and they correspond to our today's knowledge. They are only to be used as information about our products and as help for the material selection. With these values, BIEGLO does not ensure specific properties, or the suitability for certain application, therefore BIEGLO does not assume any legal responsibility for an improper usage. Since the plastics´ properties depend on the manufacturing process (extrusion, injection moulding), on the dimensions of the semi-finished material and on the degree of crystallinity, the actual properties of a specific product may slightly deviate from the tested ones. For information about divergent properties do not hesitate to contact us. On request we advise you regarding the most appropriate component design and the definition of material specifications more suitable to your application data. Notwithstanding, the customer bears all the responsibility for the thorough examination of suitability, efficiency, efficacy and safety of the chosen products in pharmaceutical applications, medical devices or other end uses. Status: June 2021

Legend	
❶	Low
❿	High
☑	Applicable
☒	Not applicable
(□)	Limited
k.Br.	No break
n.d.	Not feasible
-	Not determined
n.v.	Unavailable