Material: Polyvinylidenflouride
Abbreviation: PVDF

Licharz engineering plastics

Short description of Material:

A high crystalline, thermoplastic fluoropolymer with good mechanical, thermal and electrical properties as well as excellent chemical resistance. It has low density, good machinability and good dimensional stability in comparison to other fluoropolymers.

Colours: natural (white to ivory, translucent)

Application examples:

- pump parts
- valve bodies & valve parts
- seals
- bearings
- fixtures and fixture parts
- construction parts in chemical equipment

		dry	
Mechanical values			
Density	ISO 1183	1,78	g/cm³
Yield stress	ISO 527	56	MPa
Elongation due to tearing	ISO 527	22	%
Modulus of elasticity resulting from tensile test	ISO 527	2.000	MPa
Modulus of elasticity resulting from bending test	ISO 178	2.000	MPa
Flexural strength	ISO 178	75	MPa
Impact strength[1)]	ISO 179	o.B.	kJ/m²
Notched-bar impact strength	ISO 179	> 15	kJ/m²
Ball indentation hardness $H_{358/30}$	ISO 2039-1	120	MPa
Creep rate stress at 1% elongation[2)]	DIN 53 444	3	MPa
Sliding friction coefficient against steel (dry running)[3)]	—	0,3	—
Sliding wear against steel (dry running)[3)]	—	-	µm/km
Thermal values			
Melting temperature	ISO 3146	+ 178	°C
Thermal conductivity	DIN 52 612	0,19	W/(K·m)
Specific thermal capacity	—	0,96	J/(g·K)
Coefficient of linear expansion[4)]	—	13	$10^{-5}\cdot K^{-1}$
Operating temperature range (long-term)[5)]	—	- 40 / + 140	°C
Operating temperature range (short-term)[5)]	—	+ 160	°C
Fire behaviour	UL 94	V-0	—
Electrical values			
Dielectric constant[6)]	IEC 250	8,0	—
Dielectric loss factor[6)]	IEC 250	0,165	—
Specific volume resistance	IEC 93	5×10^{14}	Ω·cm
Surface resistance	IEC 93	10^{13}	Ω
Dielectric strength	IEC 243	25	KV/mm
Creep current resistance	IEC 112	CTI 600	—
Miscellaneous data			
Moisture absorption in normal climate until saturated	DIN 53 715	< 0,04	%
Water absorption until saturated	ISO 62	< 0,04	%

[1)]: Measured with a pendulum impact testing machine 0,1 DIN 51 222
[2)]: Tension resulting in 1% total elongation after 1.000 h
[3)]: against steel, hardened and ground , P = 0,05 MPa, V = 0,6 m/s, t = 60 °C near runnig surface
[4)]: For a temperature range of + 23 °C to + 60 °C
[5)]: Experience values established with finished parts that are not under any stress in heated air, depending on the type and form of heat exposure, short-term = max. 1 h, long-term = months
[6)]: at 10^6 Hz

w.b. = without breakage
1 MPa = 1 N/mm²
1 g/cm³ = 1.000 kg/m³
1 kV/mm = 1 MV/m

Licharz GmbH
Industriepark Nord 15
D - 53567 Buchholz/Germany
Phone: ++49 / (0) 26 83 / 9 77 -0
Fax: ++49 / (0) 26 83 / 9 77 -111
Internet: www.licharz.de
E-Mail: info@licharz.de

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