









Material Data Sheet


PVDF natural

Chemical Designation : Polyvinylidene fluoride
 DIN-Abbreviation: PVDF
 Colours, fillers: opaque

Main features

-  very good chemical resistance
 -  inherently flame retardant (UL94 V-O)
 -  continuous service temperature up to 150°C
 -  very easily welded
 -  very good electrical insulation
 -  very good sliding properties
 -  very good UV-resistance
 -  good resilience
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Preferred Fields

-  chemical engineering
 -  transport and conveyor technology
 -  electrical engineering
 -  electronics
 -  medical technology
 -  mechanical engineering
 -  pumps and instrument manufacture
 -  Solar installations
 -  food technology
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Applications

Pump housings, filter plates, valve housings, plugs, tank linings, insulators, flanges, rollers, sliding elements, agitators and kneading elements, seals, pipe linings

Properties

| Material Data Sheet | PVDF natural | | |
|---|--------------------|-------------------|------------------------------|
| Mechanical | dry / moist | | standard |
| Tensile strength at yield | 50 | MPa | DIN EN ISO 527 |
| Elongation at break | > 30 | % | DIN EN ISO 527 |
| Modulus of elasticity in tension | 2000 | MPa | DIN EN ISO 527 |
| Modulus of elasticity after flexural test | 2000 | MPa | DIN EN ISO 178 |
| Hardness | 80 | | DIN 53 456 (Kugeldruckhärte) |
| Impact strength 23° C (Charpy) | n.b. | KJ/m ² | DIN EN ISO 179 (Charpy) |
| Creep rupture strength after 1000 h with static load | 34 | MPa | |
| Time yield limit for 1% elongation after 1000 h | 3 | MPa | |
| Co-efficient of friction | 0,3 | | |

p = 0,05 N/mm²v=0,6 m/s
on steel, hardened and ground

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| Thermal | dry / moist | | standard |
|---|--------------------|----------------------|-----------------------------------|
| Glass transition temperature | -41 - -37 | °C | DIN 53 765 |
| Heat distortion temperature HDT, Method A | 95 | °C | ISO-R 75 Verfahren A (DIN 53 461) |
| Heat distortion temperature HDT, Method B | 140 | °C | ISO-R 75 Verfahren B (DIN 53 461) |
| Max. service temperature | | | |
| short term | 150 | °C | |
| long term | 150 | °C | |
| Thermal conductivity (23° C) | 0,11 | W/(K·m) | |
| Specific heat (23° C) | 1,2 | J/g.K | |
| Coefficient of thermal expansion (23-55°C) | 13 | 10 ⁻⁵ 1/K | DIN 53 752 |

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| Electrical | dry / moist | | standard |
|---|--------------------|-------|--------------------------------------|
| Dielectric constant (10 ⁶ Hz) | 8 | | DIN 53 483, IEC-250 |
| Dielectric loss factor (10 ⁶ Hz) | 0,06 | | DIN 53 483, IEC-250 |
| Specific volume resistance | 10 ^{^14} | Ω*cm | DIN IEC 60093 |
| Surface resistance | 10 ^{^13} | Ω | DIN IEC 60093 |
| Dielectric strength | 10-60 | kV/mm | DIN 53 481, IEC-243, VDE 0303 Teil 2 |
| Resistance to tracking | KA 1 | | DIN 53 480, VDE 0303 Teil 1 |

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| Miscellaneous | dry / moist | | standard |
|--|--------------------|-------------------|-----------------|
| Density | 1,78 | g/cm ³ | DIN 53 479 |
| Moisture absorption (23°C/50RH) | < 0,05 | % | DIN EN ISO 62 |
| Water absorption to equilibrium | <0,05 | % | DIN EN ISO 62 |
| Flammability acc. to UL standard 94 | V0 | | |
| Resistance to hot water, washing soda: | + | | |
| Resistance to weathering | + | | |

(1) Testing of semi-finished products

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