

Chemical Designation

PVDF (Polyvinylidene fluoride)

Colour

white opaque

Density

1.78 g/cm³

Main features

- very good chemical resistance
- inherent flame retardant
- good slide and wear properties
- very good weldable
- very good electrical insulation
- very good UV and weather resistance

Target Industries

- chemical technology
- electronics
- energy industry
- food technology
- mechanical engineering

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength	50mm/min	62	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	2200	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	62	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	8	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	17	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	77	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2100	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	16/28/59	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	1900	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	150	kJ/m ²	DIN EN ISO 179-1eU	5)
Shore hardness	D	80		DIN EN ISO 868	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		-40	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		171	°C	DIN EN ISO 11357	(2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short term	150	°C		2)
Service temperature	long term	140	°C	-	
Thermal expansion (CLTE)	23-60°C, long.	16	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	18	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1.3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.25	W/(K*m)	ISO 22007-4:2008	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
surface resistivity		10 ¹⁴	Ω	-	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Water absorption	24h / 96h (23°C)	<0.01 / <0.01	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm (2) + good resistance (3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		+		-	2)
Resistance to weathering		+		-	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	3)

