

# SUPPLY SERVICES

## performance engineering products

Ensinger 

### TECAFLO PVDF natural - Stock Shapes

#### Chemical Designation

PVDF (Polyvinylidene fluoride)

#### Colour

white opaque

#### Density

1.78 g/cm<sup>3</sup>

#### Main features

- very good chemical resistance
- inherent flame retardant
- continuous service temperature up to 150 °C
- 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
- medical technology
- mechanical engineering

#### Mechanical properties

#### parameter

#### value

#### unit

#### norm

#### comment

Modulus of elasticity (tensile test)	1mm/min	2200	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen.
Tensile strength	50mm/min	62	MPa	DIN EN ISO 527-2		(3) Specimen 10x10x10mm
Tensile strength at yield	50mm/min	62	MPa	DIN EN ISO 527-2		(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at yield	50mm/min	8	%	DIN EN ISO 527-2		(5) For Charpy test: support span 64mm, norm specimen.
Elongation at break	50mm/min	17	%	DIN EN ISO 527-2		(6) Specimen in 4mm thickness
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 <sup>2</sup>	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		129	MPa	ISO 2039-1	6)	

#### Thermal properties

#### parameter

#### value

#### unit

#### norm

#### comment

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.
Service temperature	short term	150	°C	2)	Individual testing regarding application conditions is mandatory.
Service temperature	long term	150	°C		
Thermal expansion (CLTE)	23-60°C, long.	16	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	18	10 <sup>-5</sup> K <sup>-1</sup>	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		

#### Electrical properties

#### parameter

#### value

#### unit

#### norm

#### comment

Specific surface resistance	10 <sup>14</sup>	Ω	DIN IEC 60093	
-----------------------------	------------------	---	---------------	--

#### Other properties

#### parameter

#### value

#### unit

#### norm

#### comment

Water absorption	24h / 96h (23°C)	<0.01 / <0.01	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance
Resistance to hot water/ bases	+	-			2)	(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 weathering	+					
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	3)	

Ensinger 