Liedtke Kunststofftechnik
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Technical Data Sheet Polyvinylidene Fluoride

PVDF natural

PVDF, Kynar® , Solef® , Symalit® , Dyflor®

Typical Properties

- High purity
- High flexural fatigue strength
- High stiffness
- High low-temperature impact strength
- Good weldability
- High continuous service temperature
- Electrically insulating
- Chemically resistant
- Good thermoformability
- Good weathering resistance

Typical Industries

- Chemical plant engineering
- Cleanroom technology
- Electronics
- Mechanical and plant engineering
- Food industry
- Semiconductor industry
- Semiconductor front-end applications
- Semiconductor wet bench

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm³	1.78
Moisture absorption	DIN EN ISO 62	%	0.0
Flammability (thickness 3 mm / 6 mm)	UL 94		V0 / V0
Mechanical Properties			
Yield stress	DIN EN ISO 527	MPa	55
Elongation at break	DIN EN ISO 527	%	30
Tensile modulus	DIN EN ISO 527	MPa	2100
Notched impact strength	DIN EN ISO 179	kJ / m²	12
Shore hardness	DIN EN ISO 868	scale D	80
Thermal Properties			
Melting temperature	ISO 11357-3	°C	178
Thermal conductivity	DIN 52612-1	W / (m * K)	0.2
Specific heat capacity	DIN 52612	kJ / (kg * K)	1.20
Coefficient of linear thermal expansion	DIN 53752	10^{-6} / K	140
Service temperature, long-term	Average	°C	-20 ... 140

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	Test Method	Unit	Value
Service temperature, short-term (max.)	Average	°C	150
Heat deflection temperature	DIN EN ISO 75, method A, HDT	°C	115
Electrical Properties			
Dielectric constant	IEC 60250		9
Dielectric dissipation factor (50 Hz)	IEC 60250		0.02
Volume resistivity	DIN EN 62631-3-1	Ω * cm	10^{14}
Surface resistivity	DIN EN 62631-3-2	Ω	10^{14}
Comparative tracking index	IEC 60112		600
Dielectric strength	IEC 60243	kV / mm	21

The short-term maximum service temperature applies only to applications with very low mechanical load over a few hours. The long-term maximum service temperature is based on the thermal ageing of the plastics through oxidation, which results in a decrease of the mechanical properties. The temperatures stated are those which, after a period of at least 5,000 hours, cause a 50% decrease of the tensile strength (measured at room temperature) compared with the initial value. This value does not indicate the mechanical strength of the material at high application temperatures. In thick-walled parts, only the surface layer is affected by oxidation at high temperatures, which can be better protected by the addition of antioxidants. The core of the parts remains undamaged in any case. The minimum service temperature is largely determined by possible impact or shock loading in service. The values stated refer to low impact loading. The electrical values were measured on natural-coloured, dry material. With other colours (in particular black) or moist material, significant changes of the electrical values may occur. The values stated are average values secured by continuous statistical testing. They comply with the requirements of DIN EN 15860. They serve only as information about our products and as an aid to material selection. We do not legally warrant any specific properties or suitability for a particular purpose. As the properties also depend on the dimensions of the semi-finished stock and the degree of crystallinity (e.g. nucleation by pigments), the actual property values of a specific product may deviate somewhat from the data.

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