

ETFE

Chem. Designation: Ethylen-Tetrafluorethylen

DIN-Abbreviation: ETFE

Properties		Value	Unit	ISO/IEC
Density		1,7 / -		
- at saturation in water of 23°C		0,03 / -	%	
Thermal Properties				
Crystalline melting point		270 / -	°C	-
Glass transition temperature		-100 / -	°C	-
Thermal conductivity (23° C)		0,24 / -	W/(k·m)	-
Coefficient of thermal expansion: - average value between 23 and 60°C		13 · 10 ⁻⁵ / -	m/(m·K)	-
Temperature of deflection under load - Method a: 1,8 MPa		71 / -	°C	75
Max. service temperature in air: -short periods 2		180 / -	°C	-
Max. service temperature in air: -continuously: for min. 5000/20.000 h		- / 150	°C	-
Flammability acc. to UL standard 94 (thickness 3mm/6mm)		V0 / V0		-
Mechanical Properties (at 23°C)				
Tensile strength at yield/Tensile strength at break	dry	40 / -	MPa	527-1/-2
Elongation at break	dry	40 / -	%	527-1/-2
Modulus of elasticity in tension	dry	800 / -	MPa	527-1/-2
impact-strength - Charpy unnotched	dry	o.B. / -	kJ/m ²	179/1eU
Ball indentation hardness H 358 / 30 or H 961 / 30	dry	60 / -	N/mm ²	2039-1
Coefficient of Friction 4)	dry	0,4 / -	μ	
Electrical Properties				
Volume resistivity	dry	10 ¹⁶ / -	Ohm·cm	60093
Dielectric constant at 1 MHz	dry	2,6 / -		60250
Dielectric dissipation factor tan δ at 1 MHz	dry	0,001 / -		60250

dry = values referring to dry materials
 moist = values referring to material in equilibrium with the standard atmosphere 23°C/50% RH
 o.B. = no break

1) after 24/96h immersion in water of 23°C
 2) only for short time exposure (a few hours) in applications where no or only a very low load is applied to the material
 3) stress to produce 1% strain in 1000 h (s 1/1000)
 4) p = 0,05 N/mm², v = 0,6 m/s surface roughness C35 steel mating surface Ra 0,7 - 0,9

This table is a valuable help in the choice of material. The data listed here fall within the normal range of product properties. However, they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design. It has to be noted that fibre reinforced material shows an anisotropic behaviour (properties differ when measured parallel and perpendicular to be extrusion direction).