

Halar®

Chem. Designation: Ethylene ChloroTriFluoroEthylene

DIN-Abbreviation: ECTFE

Properties	Value	Unit	ISO/IEC
Density	1,65 / 1,71		
- at saturation in water of 23°C	0,01 / -	%	

Thermal Properties	Value	Unit	ISO/IEC
Crystalline melting point	240 / -	°C	-
Glass transition temperature	85 / -	°C	-
Thermal conductivity (23° C)	0,151 / 0,157	W/(k·m)	-
Coefficient of thermal expansion: - average value between 23 and 100°C	50 · 10 ⁻⁶ / -	m/(m·K)	-
Temperature of deflection under load - Method a: 1,8 MPa	65 / -	°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	-
Minimum service temperature	-76 / -	°C	-
Flammability acc. to ASTM („Oxygen index“)	52 / -	%	4589
Flammability acc. to UL standard 94 (thickness 3mm/6mm)	V0 / V0		-

Mechanical Properties (at 23°C)	Value	Unit	ISO/IEC
Tensile strength at yield/Tensile strength at break	dry 29 / 30	MPa	527-1/-2
Tensile strength	dry 46 / 55	MPa	527-1/-2
Elongation at break	dry 250 / 300	%	527-1/-2
Modulus of elasticity in tension	dry 1600 / 1700	MPa	527-1/-2
Ball indentation hardness H 358 / 30 or H 961 / 30	dry 55 / -	N/mm ²	2039-1
Coefficient of Friction 4)	dry 0,19 / 0,2	μ	

Electrical Properties	Value	Unit	ISO/IEC
Dielectric strength	dry 14 / -	kV/mm	60243
Volume resistivity	dry 10 ¹⁶ / -	Ohm·cm	60093
Surface resistivity	dry 10 ¹⁵ / -	Ohm	60093
Dielectric constant at 1 MHz	dry 2,5 / -		60250
Dielectric dissipation factor tan δ at 1 MHz	dry 0,013 / -		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).