

Table 2

The main characteristics of extrusion films made from thermoplastic fluoropolymers brands.

Membrane brand (analogue)	ρ , kg/m ³	Destructive tension, MPa		Elongation at break, %		ρ_v at 20 °C Omxm	tg δ		Permittivity		Dielectric strength, MV / m		Moisture permeability. $\times 10^{16}$, kg·m/(m ² ·s·Pa)	Operation temperature, °C	
		along	across	along	across		1 kHz	1 mHz	1 kHz	1 mHz	DC U	50 Hz		min	max
F-4МБ (FEP)	2110-2150	17-50	16-35	160-350	150-300	(0.4-2)·10 ¹⁵	3·10 ⁻⁴	(0.7-1.2)·10 ⁻³	1.9-2.1	1.9-2.2	100-350	100-200	0.56-1.46	-150	200
F-4МБ-2 (FEP)	2110-2150	17-35	16-30	200-300	150-300	10 ¹⁵	2·10 ⁻⁴	<9·10 ⁻⁴	1.9-2.1	1.9-2.1	150-350	100	0.48	-60	200
F-40 (ETFE)	1700-1800	25-45	10-35	50-250	100-350	10 ¹⁴ -10 ¹⁵	3·10 ⁻³	(5-7)·10 ⁻³	2.4-2.5	2.3-2.6	100-400	120-320	5.0-6.4	-70	200
F-3 (PCTFE)	2090-2160	22-50	19-40	40-200	-	10 ¹⁵ -10 ¹⁶	(2.2-2.4)·10 ⁻²	(0.9-3)·10 ⁻²	2.4-3.0	2.3-2.4	40-148	130-150	0.04-0.09	-50	100
F-3М (PCTFE)	2010-2020	20-45	20-40	100-300	100-300	10 ¹⁴ -10 ¹⁵	10 ⁻²	(1.1-2)·10 ⁻²	2.6-2.8	2.3-2.5	100-200	50-150	0.09-0.13	-50	120
F-30 (ECTFE)	1650-1700	35-50	30-45	50-180	50-180	(0.8-1)·10 ¹⁴	(2-3.3)·10 ⁻³	(1.5-3)·10 ⁻³	2.0-2.6	2.0-2.6	150-200	80-130	0.27-2.02	-196	150
F-2М (PVDF)	1750-1800	30-55	23-42	200-420	280-500	(0.3-1)·10 ¹¹	2·10 ⁻²	0.1-0.2	7-9	7-9	100-140	50-100	7.9-10.4	-40	130
F-50 (PFA)	2100-2200	17-23	15-24	250-340	300-370	(0.5-1)·10 ¹⁶	<3·10 ⁻⁴	2·10 ⁻⁴	1.9-2.1	1.9-2.1	-	100	2.5	-196	250