

# Fluoropolymers Technical Properties

	Properties	DIN or ASTM Standard	Unit	PTFE	FEP	MFA	PFA	ETFE	PVDF
<b>Physical</b>	Specific Gravity	53479	g/cc	2.14-2.19	2.12-2.17	2.12-2.17	2.12-2.17	1.71-1.78	1.78
	Maximum Working Temperature		°C	260	205	240	260	150	140
	Flame Rating		UL-94	94 V-O	94 V-O	94 V-O	94 V-O	94 V-O	94 V-O
	Water Absorption	53495	%	<0.01	<0.01	<0.03	V0.03	<0.1	0.02
<b>Mechanical</b>	Ultimate tensile strength at 23°C	53455		29-39	19-25	28-36	27-32	36-48	35-45
	Ultimate tensile strength at 150°C		Mpa	14-20	4-6	15-21	15-21	8-12	
	Ultimate tensile strength at 250°C			n.kn.	n.a.	6-8	14-15	n.a.	
	Yield point at 23°C	53455	N/mm <sup>2</sup>	10	12	12	14	24	56
	Elongation at break , at 23°C	53455	%	200-500	250-350	300-360	300	200-500	22
	Modulus of elasticity in tension at 23°C	53457	N/mm <sup>2</sup>	400-800	350-700	500-550	650	500-1200	2000
	Maximum bending stress at 23°	53452	Mpa	18-20		13	15	25-30	50
	Flexural Modulus	53457	N/mm <sup>2</sup>	600-800	660-680	600-650	650-700	1000-1500	1950
	Ball Hardness 132-60	53456	N/mm <sup>2</sup>	25-30	23-29	n.kn.	25-30	34-40	120
	Rockwell Hardness R	ASTM-D-785							
	Shore Hardness D	53505		55-72	55-60	59	60-65	63-75	78
	Coefficient of friction (dry with steel)			0.05-0.20	0.30-0.35	0.10-0.20	0.20-0.30	0.30-0.50	
<b>Thermal</b>	Melting temperature	ASTM 2116	°C	327	253-282	280-290	300-310	265-275	178
	Heat deflection temperature @ 18.5 Kp/sq.cm	53461	°C	50-60	51	n.kn.		71-74	
	Heat deflection temperature @ 4.6 Kp/sq.cm	ISO R 75	°C	130-140	70			104	
	Coefficient of expansion		1/K.10-5	10-16	8-14	12-20	10-16	8-12	13
	Thermal conductivity at 23°C	52612	W/K.m	0.23	0.20	0.22	0.22	0.23	0.24
	Specific heat at 23°C		Kj/Kg.K	1.01	1.17	1.09	1.09	1.95	1
	Oxygen index		%	>95	>95	>95	>95	>30	>40
<b>Electrical</b>	Relative permittivity at 10 (3) Hz	53483		2.0-2.1	2.1	2.04-2.08	2.06-2.1	2.6	
	Relative permittivity at 10 (6) Hz			2.0-2.1	2.1	2.04-2.08	2.06-2.1	2.6	
	Surface resistivity	ICE 93+167	Ohms	10 (17)	10 (16)	10 (17)	10 (17)	10 (14)	>10 (13)
	Arc resistance	ASTM 495	sec	>360	>300	>210	>210	>75	>50
	Dielectric strength	53481	KV/mm	40-80	50-80	50-80	50-80	60-90	30-60

IMPORTANT NOTE: The above data is intended as a guide and is taken from resin manufacturers data. Adtech cannot take responsibility for the accuracy of the data.