

Fluoroplastics

Properties	ASTM	UNIT	PTFE	FEP	PFA	ECTFE	MFA
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Mechanical Properties

Specific Gravity	D792		2.130 - 2.20	2.12 - 2.17	2.12 - 2.17	1.68	2.12 - 2.17
Elongation	D638	%	200 - 450	250 - 330	280 - 400	200 - 300	300 - 600
Tensile Strength	D638	PSI	2,000-45,000	2,800 - 5,000	4,000 - 4,500	6,600 - 7,800	3,500 - 4,400
Flexural Strength	D790	PSI	no break	no break	no break	7000	N/A
Compressive Strength	D695	PSI	3500	2200		1276 - 1711	2200
Tensile Elastic Modulus	D638	PSI	57000	50,000	72,500 - 87,000	240,000	65,000-78,000
Flexural Modulus	D790	PSI	71,000 - 85,000	78,000-92,000	94,000-99,000	240,000	95,000
Flex Life	D2176	MIT Cycles	> 1,000,000	5,000 - 80,000	10,000 - 50,000	N/A	10,000 - 100,000
Hardness Durometer		Shore D	D56 - D65	D55	D55 - D60	D75 - D90	D55 - D60
Coefficient of Friction		On Steel	0.02	0.05	0.02	0.19	0.02
Abrasion Resistance	Taber	1000 Revs.	12	14 - 20	9 - 17	0.005	10 - 17
Impact Strength IZOD	D256	Notched ft/lbs/in	3	no break	no break	no break	no break

Thermal Properties

Melting Point		°C	327	260	305	240	285
		°F	621	500	582	464	545
Upper Service Temp		°C	260	204	260	150 - 170	260
		°F	500	400	500	300 - 340	500
Flamibility		UL 94	V-0	V-0	V-0	V-0	V-0
Linear Coefficient of Thermal Expansion	D696	10 ⁻⁵ °C	>11.6	8.0 - 10.5	13	N/A	11 - 12
Heat of Fusion		BTU/LB	29-37	11	13	N/A	25.6
Heat of Combustion		BTU/LB	2,200	2,200	2,300	N/A	6,200
Low Temperature Embrittlement		°C	- 268	- 268	- 268	- 76	- 232
		°F	- 450	- 450	- 450	- 105	- 450

Electrical Properties

Dielectric Constant	D150	10 ³ Hz	2.1	2.1	2.1	2.5	2.0
Dielectric Strength 10 mil Film	D149	v/mil	≥ 1,400	≥ 1,400	≥ 1,400	N/A	2,000
Volume Resistivity	D257	ohm-cm	> 10 ¹⁸	> 10 ¹⁸	> 10 ¹⁸	> 10 ¹⁶	> 10 ¹⁷
Surface Resistivity	D257	ohm/sq.	> 10 ¹⁷	> 10 ¹⁷	> 10 ¹⁷	> 10 ¹⁴	> 10 ¹⁷

General Properties

Chemical / Solvent Resistance	D543		Excellent	Excellent	Excellent	Excellent	Excellent
Water Absorption 24hr	D570	%	<.01	<.01	<.03	<.01	<.03
Deformation Under Load	D621	100 °C	5.0	5.0	2.4	2.6	N/A
Refractive Index			1.35	1.338	1.34	1.447	N/A
Limiting Oxygen Index	D2863	%	> 95	> 95	> 95	60	> 95
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