

Fluoro Polymer TUBING SPECIFICATIONS

	Property	Specification (ASTM)	Unit	Material								
				PTFE	PFA	FEP	MFA	THV	ETFE	ECTFE	PVDF	PEEK
General	Continuous service temperature	Maximum	°C	260	260	200	240	120	150	150	150	250
			° F	500	500	392	464	250	302	302	302	482
	Chemical resistance		Excellent	Excellent	Excellent	Excellent	Good	Excellent	Good	Good	Excellent	
	Specific gravity	D 792	-	2.15	2.15	2.15	2.16	1.97	1.73	1.70	1.78	1.32
Electrical	Dielectric constant	D 150 at 10 ³ Hz	-	2.1	2.1	2.1	2.1	3.5	2.6	2.5	7.2	-
		D 150 at 10 ⁶ Hz	-	2.1	2.1	2.1	2.1	4.2	2.6	2.5	8.5	-
	Dielectric dissipation factor	D 150 at 10 ³ Hz	-	0.0002	0.0002	0.0001	0.0002	0.12	0.0008	0.0018	0.030	-
		D 150 at 10 ⁶ Hz	-	0.0002	0.0003	0.0008	0.0003	0.17	0.005	0.0012	9 x 10 ⁻²	-
	Dielectric strength (short term) 10 mils film	D 149	Volt/mil	> 1 400	2 000	2 000	2 000	1 8	2 000	2 000	1 600	>500
Volume resistivity	D 257	Ohm-cm	>10 ¹⁰	>10 ¹⁶	>10 ¹⁵	>10 ¹⁷	>10 ¹⁵	>10 ¹⁶	>10 ¹⁵	>10 ¹⁴	>10 ¹⁴	
Environmental	Water absorption	D 570	%	< 0.01	< 0.03	< 0.01	< 0.03	< 0.01	< 0.03	< 0.01	< 0.04	< 0.5
	Weather resistance	-	-	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
	Oxygene index	D 2863	%	> 95	> 95	> 95	> 95	> 65	> 30	60	44	35
	Flammability	UL 94	-	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
Mechanical	Tensile strength	D 1708, D 638	psi	3 500	4 000	3 500	3 500	4 300	6 500	7 000	5 000	2 100
	Elongation	D 1708, D 638	%	300	300	300	300	500	200	200	150	50
	Compressive strength	D 695	psi	3 500	2 200	2 200	2 200	1 800	7 000	7 000	11 600	17 100
	Impact strength	D 256 at +23°C	ft-Lb/in	3.5	No Break	No Break	No Break	No Break	No Break	No Break	3-6	655
	Flexural Modulus	D 790 at +23°C	psi	90 000	100 000	95 000	95 000	180 000	200 000	240 000	250 000	530 000
	Tensile Modulus	D 638	psi	80 000	40 000	50 000	40 000	30 000	120 000	240 000	200 000	520 000
	Hardness	D 2240	-	D-60	D-60	D-55	D-59	D-45	D-75	D-75	D-78	R-126
	Thermal	Melting point		° C	327	306	270	286	125-185	260° C	240	160
° F				620	581	518	545	257-365	500° F	464	320	633
Thermal conductivity		C-177	BTU/hr/ft ² /°F.in	1.7	1.3	1.4	1.4	1.4	1.6	1.6	1.3	1.2
Deflection temperature 66 psi 264 psi		D 648	° C	122	74	99	65	31-37	104	104		
				55	48	57	50	28-32	71	71	113	141
Deflection temperature 66 psi 264 psi	D 648	° F	252	166	138	149	88-99	220	220			
			131	118	134	122	82-90	160	160	235	285	