



Summary of Properties

PTFE, FEP and PFA

The table below lists a generally accepted summary of properties that we believe to be reliable. Please note that many of these resins are produced in several varieties and property characteristics may vary. Therefore, determination of resin is dependent on the application and this table is only meant to serve as a general guideline.

Properties*	ASTM or Unit	PTFE	FEP	PFA	High Purity PFA
MECHANICAL PROPERTIES					
Specific Gravity	D792 D3307	2.13-2.22 -	2.12-2.17 -	2.12-2.17 -	- 2.14-2.16
Elongation %	D638 D3307	200-450 -	250-330 -	280-400 -	- 370
Tensile Strength (psi)	D638(psi) D3307(psi)	2000-7000 -	2800-4000 -	4000-5000 -	- 4693
Flexural Strength (psi)	D790	no break	no break	no break	no break
Compressive Strength (psi)	D695	700-900	725-2200	725-810	na
Tensile Elastic Modulus (Young's Modulus) (psi)	D638	57,000 -	50,000 -	72,500- 87,000	na
Flexural Modulus	D790(psi) D790 103MPa (103kgf/cm2)	71,000-85,000 0.5-0.6 (5.0-6.0)	78,000-92,000 0.5-0.6 (5.5-6.4)	94,000-99,000 0.6-0.7 (6.6-7.0)	- 647-686 -
Flex Life (MIT cycles)	D2176	>1,000,000	5,000-80,000	10,000-500,000	2000 x 10 ³
Hardness Durometer Shore D	D2240	D50-65	D55	D55-D60	D60
Coefficient of Friction	(on steel)	0.02	0.05	0.04-0.06	0.05
Abrasion Resistance 1000 cycles	Taber	8-90	14-20	0.00-96.75	na
Impact Strength IZOD. 73°F/23°C notched ft/lbs/in	D256	3	no break	no break	no break
THERMAL PROPERTIES					
Melting Point	°C °F	327 621	260 500	305 582	305 582
Upper Service Temperature(20000h)	°C °F	260 500	204 400	260 500	260 500
Flammability	UL 94	V-0	V-0	V-0	V-0
Thermal Conductivity BTU-in/hr-ft ² , °F		1.7-2.08	1.4	1.3	na
Thermal Conductivity Cal-cm/sec-cm ² , °C		6 x 10 ⁻⁴	6 x 10 ⁻⁴	6 x 10 ⁻⁶	na
Linear Coefficient of Thermal Expansion Min/in°F 73.4-140°F	D696	55.6	46.1-58.3	66.7	na
Heat of Fusion	BTU/LB	29-37	4-35	13	na
Heat of Combustion	BTU/LB °F	2200	2200	2300	na
Low Temperature Embrittlement	°C °F	-268 -450	-268 -450	-268 -450	-268 -450
ELECTRICAL PROPERTIES					
Dielectric Constant	D150/10 ³ Hz D150/10 ⁶ Hz	2.1 2.1	2.1 2.1	2.1 2.1	2.1 2.1
Dielectric Strength	D149/125 MIL D149/10 MIL	500 ≥1400	508 >610	500 ≥1400	500 - 600 na
Volume Resistivity	D257/ohm-cm	>10 ¹⁸	>10 ¹⁸	>10 ¹⁸	na
Surface Resistivity	D257/ohm-cm	>10 ¹⁸	>10 ¹⁷	>10 ¹⁷	na
GENERAL PROPERTIES					
Chemical/Solvent Resistance	D543	Excellent	Excellent	Excellent	Excellent
Refractive Index		1.35	1.338	1.34	1.34
Limiting Oxygen Index, %	D2868	>95	>95	≥95	na
Water Contact Angle	Angle to Level	110	114	115	na
Water Absorption 24h,%	D570	<0.01	<0.01	<0.03	<0.01
Weatherability		Excellent	Excellent	Excellent	Excellent

*General resin properties; Tubing properties may vary.