

Characteristics of fluoro resin



Comparison chart of fluoro resin properties								
Category	Unit	ASTM testing method	PFA	FEP	ETFE	PVdf	PTFE	
Physical	Relative density	—	D792	2.12~2.17	2.12~2.17	1.70~1.76	1.78	2.14~2.20
	Melting point	°C	—	302~310	253~282	260~270	140~145	320~330
Mechanical	Tensile strength	MPa	D638	24~41	19~22	40~44	20~34	27~34
	Elongation	%	D638	280~300	250~330	400~440	100~300	200~400
	Compression strength	MPa	D695	17	15	49	40~55	12
	Tensile elasticity	MPa	D638	—	343	490~784	784~1,960	392
	Bending elasticity	MPa	D790	647~686	539~637	882~1,372	1,372~1,764	490~588
	Impact strength (izot)	J/m	D256	No destruction	No destruction	No destruction	160~370	160
	Hardness	Rockwell	D785	—	—	R50	—	—
	Hardness	Durometer	D1706	D60	D55	D75	D65~70	D50~65
	Coefficient of dynamic friction	0.7MPa3m/min	—	0.2	0.3	0.4	0.39	0.1
	Thermal	Thermal conductivity	W/m/k	C177	0.25	0.25	0.24	0.10~0.13
Specific heat		10 ³ J/kg/k	D240	1.0	1.2	1.9~2.0	1.4	1.0
Coefficient of linear expansion		10 ⁻⁵ /°k	D696	12	8.3~10.5	5.9	7~14	10
Critical temperature		°C	—	260	200	150	125	260
Deflection 0.45MPa		°C	D648	74	72	104	149	121
Deflection 1.8MPa		°C	D648	50	50	74	87~120	55
Electrical	Electrical resistivity	Ω·cm	D257	>10 ¹⁸	>10 ¹⁸	>10 ¹⁶	2×10 ¹⁴	>10 ¹⁸
	Breakdown strength	KV/mm (thickness 3.2mm)	D149	20	20~24	16	10	19
	Conductivity 60 Hz	—	D150	<2.1	2.1	2.6	8.4	<2.1
	Conductivity 10 ³ Hz	—	D150	<2.1	2.1	2.6	8.4	<2.1
	Conductivity 10 ⁶ Hz	—	D150	<2.1	2.1	2.6	6.4	<2.1
	Dielectric dissipation factor 60 Hz	—	D150	<0.0002	<0.0002	0.0006	0.05	<0.0002
	Dielectric dissipation factor 10 ³ Hz	—	D150	<0.0002	<0.0002	0.0008	0.02	<0.0002
	Dielectric dissipation factor 10 ⁶ Hz	—	D150	<0.0003	<0.0005	0.005	<0.015	<0.0002
	Arc resistance	sec	D495	>300	>300	75	50~70	>300
	Chemical resistance	—	D543	Excellent	Excellent	Good	Acceptable	Good
	Non-flammability	—	D635	Non-inflammability	Non-inflammability	Flame retardance	Flame retardance	Non-inflammability
	Water absorption(24hr)	%	D570	<0.01	<0.01	0.03	0.05	<0.01

● The data above are representative values and not guaranteed values.