Fluon® ETFE

product information

Chemical Resistance of Fluon® ETFE

CHEMICAL RESISTANCE

Fluon® ETFE excellent chemical resistance, specifically inorganic acids and bases and organic solvents. The table below shows the effect of various chemicals on Fluon® ETFE.

The reported results were obtained by using micro-tensile bars of 1-mm thickness. Property changes less than 15% are acceptable for usage.

TABLE

Chemical Categories	Chemical		Temp. (°C)	Days	Retention (%)	
					Elongation	Wt. Gain
Inorganic Acids	Conc. Hydrochloric Acid	35%	100	10	100	0.0
	Sulfuric Acid	78%	121	10	100	0.1
		98%	121	10	100	0.0
	Oleum		25	10	96	1.3
	Nitric acid	25%	100	14	100	-
		60%	120	10	100	0.7
		70%	60	60	100	-
		70%	120	7	10	-
	Fuming nitric acid		25	10	92	0.6
	Hydrofluoric acid		25	7	95	0.1
	Phosphoric acid	30%	100	10	97	-0.4
		85%	121	10	95	0.4
	Chromic acid	50%	100	10	98	0.3
Alkalis	Sodium hydroxide	10%	120	10	97	0.0
		50%	120	10	100	-0.3
	Potassium	20%	100	7	100	0.0
	Ammonium hydroxide	15%	66	7	98	0.1
Other Inorganic Compounds	Chlorine		90	10	94	-
			120	7	85	7.0
			150	10	41	-
	Bromine		60	7	100	0.1
	Hydrogen peroxide		25	7	98	0.0
	Water		100	7	100	0.0
	Phosphorus trichloride		75	7	99	-
	Phosphorus oxychloride		100	7	99	-
	Silicon tetrachloride		55	7	100	-
	Sulfuric chloride		70	7	100	6.0
	Carbon disulfide		100	30	98	1.0
	Ferric chloride	25%	70	7	100	6.0

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Chemical Categories	Chemical	Temp. (°C)	Days	Retention (%)	
				Elongation	Wt. Gain
Amines	Aniline	25	11	98	0.1
		120	30	82	1.6
	N-methylaniline	120	30	100	0.0
	N-butylamine	78	7	93	5.0
	N-dibutylamine	120	30	99	0.0
		159	7	72	-
	N-tributylamine	120	30	95	-
	Pyridine	116	11	100	3.8
	Ethylenediamine	25	11	100	-
		117	11	96	2.0
	Triethylamine	90	11	90	1.5
	Dimethylformamid	25	11	100	0.4
		120	11	95	2.7
	Dimethylacetamide	121	7	98	3.6
Aromatic Compounds	Phenol	100	11	100	0.3
		120	11	67	0.9
	Benzaldehyde	120	11	94	2.3
	Chlorobenzene	25	11	87	0.4
		120	11	98	3.6
	Nitrobenzene	25	11	98	0.2
		120	11	96	3.0
	Benzene	80	11	95	2.6
	Toluene	111	11	100	2.6
	Xylene	120	11	88	2.5
	Cresol	120	11	80	1.7
Chlorine Compounds	Chloroform	25	11	100	1.6
		61	11	80	1.7
	Carbon disulfide	25	11	100	0.1
		77	11	80	5.0
	Methylene chloride	40	11	100	3.9
	Trichloroethylene	87	11	100	4.8
	Perchloroethylene	77	11	100	5.5
	Ethylene dichloride	84	11	88	3.8
	Freon 113	47	11	-	3.8
	Epichlorohydrin	117	11	78	3.7
	Benzoyl chloride	120	30	100	0.0
Ethers	Propylene oxide	25	11	82	3.2
	Tetrahydrofuran	25	11	98	2.3
		66	11	92	4.2
	Dioxane	105	11	86	6.0
	Ethylether	25	11	87	1.0
	Cellosolve	121	11	88	1.3
Ketones	Acetone	25	11	97	2.3
		56	11	93	2.5
	Methylethylketone	25	11	100	1.6
		80	11	100	3.1
	Methylisobutylketone	25	11	-	0.3
		116	11	100	3.3
	Acetophenone	121	11	80	2.5
	Cyclohexanone	121	11	72	5.2

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Chemical Categories	Chemical	Temp. (°C)	Days	Retention (%)	
				Elongation	Wt. Gain
Organic Acids	Glacial acetic acid	25	11	87	0.7
		118	11	80	2.2
	Oxalic acid	120	11	100	0.1
	Citric acids	120	11	87	0.1
	Stearic acid	120	11	83	0.1
	Formic acid	100	11	100	0.1
	Glycolic acid	120	11	98	0.0
	Chloroacetic acid	100	11	100	0.6
	Trichloroacetic acid	100	11	84	2.5
	Phthalic acid	120	11	100	0.1
	Lactic acid	119	11	98	0.1
Ester	Ethyl acetate	25	11	100	2.3
		77	11	100	3.4
	Butyl acetate	120	11	88	3.5
	Dimethyl phthalate	25	11	87	0.4
Alcohols	Methanol	65	11	93	0.3
	Ethanol	78	11	98	0.6
	Cyclohexanol	120	11	88	1.2
	Benzyl alcohol	120	11	92	0.8
	Propyl alcohol	97	11	93	0.7
	Diacetone alcohol	120	11	91	2.8
Other Hydrocarbons	Hexane	69	11	84	1.1
	Skidroll 500B	120	11	100	0.6
	Mineral oil ASTM No.3	120	11	96	0.2
	Octane	120	11	98	0.2
	Octene	120	11	99	1.1
	Cyclohexane	81	11	94	1.4
	Decalin	120	7	95	-
	Dimethylsufoxide	120	11	89	1.3
	Acetonitrile	82	11	93	1.5

For more information and samples, contact:

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