

Glass Lined & Fluoropolymer Lined
Equipments Manufacturer



شیمی آذر جام

راهنمای خوردگی (گلاس لایند و فلورو پلیمر لایند)

Corrosion Guide (Glass Lined & Fluoropolymer Lined)

Glass lined Equipment

CHEMICAL RESISTANCE TABLE

Row	Chemical	25 °C	100 °C	150 °C
1	Ethyl ether	A	A	B
2	Ethanol	A	A	A
3	Ethylenediamine	A	A	B
4	Acrylic acid	A	A	A
5	Aluminium chloride(AS)	A	A	A
6	Aluminoethanol	A	A	A
7	Alminobenzene(aniline)	A	A	A
8	Aminophenol	A	A	A
9	Ammonium difluoride (AS)	C	C	C
10	Ammonium carbonate (AS)	A	A	A
11	Ammonium nitrate (AS)	A	A	A
12	Ammonium phosphate (AS)	A	A	A
13	Ammonium sulphate (AS)	A	A	A
14	Ammonium sulphide (AS)	A	B	C
15	Acetone	A	A	A
16	Benzaldehyde	A	A	A
17	Benzoic acid	A	A	A
18	Benzene	A	A	A
19	Benzyl chloride	A	A	B
20	Lead acetate	A	A	A
21	Boric acid (AS)	A	A	A
22	Bromine	A	A	B
23	Chlorine	A	A	A
24	Chlorinated paraffin	A	A	A
25	Chlorosulphonic acid	A	A	A
26	Chlorine water	A	A	A
27	Chromic acid (AS)	A	A	A
28	Diethylamine	A	A	B
29	Dibromoethene	A	A	A
30	Dichlorobenzene	A	A	A
31	Dichloroacetic acid	A	A	A
32	Dimethyl sulphate	A	A	A
33	Iron(II)chloride (AS)	A	A	A
34	Iron(III)nitrate	A	A	A
35	Iron(II)sulphate(AS)	A	A	A
36	Acetic acid	A	A	A
37	Acetic anhydride	A	A	A
38	Fatty acids	A	A	A
39	Hydrofluoric acid (AS)	C	C	C
40	Fluorides	C	C	C
41	Formaldehyde	A	A	A
42	Glycol	A	A	A
43	Urea	A	A	A
44	Isopropyl alcohol	A	A	A
45	Iodine	A	A	A
46	Potassium bromide (AS)	A	A	B
47	Potassium Hypochloride (AS)	A	B	C
48	Potassium carbonate (AS)	A	B	C
49	Calcium chloride (AS)	A	A	A
50	Aqua regia		A	A

Row	Chemical	25 °C	100 °C	150 °C
51	Copper chloride (AS)	A	A	B
52	Copper sulphate (AS)	A	A	A
53	Lithium chloride (AS)	A	B	C
54	Magnesium chloride (AS)	A	A	B
55	Magnesium sulphate (AS)	A	A	A
56	Maleic acid	A	A	A
57	Methanol	A	A	A
58	Monochloroacetic	A	A	B
59	Naphthalene Sodium	A	B	C
60	Dichromate (%50AS)	A	A	B
61	Sodium bicarbonate (AS)	A	A	A
62	Sodium bisulphate (AS)	A	A	B
63	Sodium chloride(AS)	A	A	A
64	Sodium hypochloride (AS)	A	B	C
65	Sodium nitrate (AS)	A	A	A
66	Sodium sulphate (AS)	A	A	A
67	Sodium sulphite	A	A	A
68	Nitrobenzene	A	A	A
69	Oleum	A	A	A
70	Oxalic acid (AS)	A	A	A
71	Perchloric acid (AS)	A	A	A
72	Phenol	A	A	A
73	Phosphorous acids	A	A	B
74	Triethyl phosphate	A	A	A
75	Phosphorus trichloride	A	A	A
76	Phthalic anhydride	A	A	A
77	Picric acid	A	A	A
78	Pyridine	A	A	A
79	Pyrrolidine	A	B	C
80	Nitrous acid (AS)	A	A	A
81	Sulphuric anhydride	A	A	A
82	Hydrogen sulphide (AS)	A	A	A
83	Tetrachloroethylene	A	A	A
84	Carbon tetrachloride	A	A	A
85	Toluene	A	A	A
86	Trichloroethene	A	A	A
87	Trichloroacetic acid (AS)	A	A	A
88	Xylene	A	A	A
89	Zinc chloride (AS)	A	A	B
90	Tin chloride (AS)	A	A	A
91	Citric acid (AS)	A	A	A

AS	Aqueous solution
A	Good resistance
B	(corrosion rate- 0.1 mm/y) Conditional resistance (corrosion > 0.1 mm/y to 0.2 mm/y)
C	Poor resistance (corrosion rate- 0.2 mm/y)

CHEMICAL RESISTANT TABLE FOR FLOUROROPOLYMERS

Row	Chemical	ECTFE			FEP			PFA			PTFE		
		20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C
1	Acetaldehyde	ND	ND	ND	R	R	R	R	R	R	R	R	R
2	Acetic acid (%10)	R	R	R	R	R	R	R	R	R	R	R	R
3	Acetic acid (glac./anh.)	R	R	R	R	R	R	R	R	R	R	R	R
4	Acetic anhydride	R	R	R	R	R	R	R	R	R	R	R	R
5	Aceto- acetic ester	R	R	ND	R	R	R	R	R	R	R	R	R
6	Acetone	R	R	R	R	R	R	R	R	R	R	R	R
7	Other ketones	R	R	R	R	R	R	R	R	R	R	R	R
8	Acetonitrile	R	R	ND	R	R	R	R	R	R	R	R	R
9	Acetylene	R	R	R	R	R	R	R	R	R	R	R	R
10	Acetyl salicylic acid	R	R	R	R	R	R	R	R	R	R	R	R
11	Acid fumes	R	R	R	R	R	R	R	R	R	R	R	R
12	Alcohols	R	R	R	R	R	R	R	R	R	R	R	R
13	Aliphatic esters	R	R	R	R	R	R	R	R	R	R	R	R
14	Alkyl chlorides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15	Alum	R	R	R	R	R	R	R	R	R	R	R	R
16	Aluminium chloride	R	R	R	R	R	R	R	R	R	R	R	R
17	Aluminium sulphate	R	R	R	R	R	R	R	R	R	R	R	R
18	Ammonia, anhydrous	R	R	R	R	R	R	R	R	R	R	R	R
19	Ammonia, aqueous	R	R	R	R	R	R	R	R	R	R	R	R
20	Ammonia, chloride	R	R	R	R	R	R	R	R	R	R	R	R
21	Almyl acetate	R	R	NR	R	R	R	R	R	R	R	R	R
22	aniline	R	R	R	R	R	R	R	R	R	R	R	R
23	Antimony trichloride	ND	ND	ND	ND	ND	ND	DN	DN	DN	ND	ND	ND
24	Aqua regia	R	R	R	R	R	R	R	R	R	R	R	R
25	Aromatic solvents	R	R	R	R	R	R	R	R	R	R	R	R
26	Ascorbic acid	R	R	R	R	R	R	R	R	R	R	R	R
27	Beer	R	R	ND	R	R	R	R	R	R	R	R	R
28	Benzaldehyde	R	R	R	R	R	R	R	R	R	R	R	R
29	Benzene	ND	ND	ND	R	R	R	R	R	R	R	R	R
30	Benzoic acid	R	R	R	R	R	R	R	R	R	R	R	R
31	Benzoyl peroxide	R	R	ND	R	R	R	R	R	R	R	R	R
32	Boric acid	R	R	R	R	R	R	R	R	R	R	R	R
33	Brines, saturated	R	R	R	R	R	R	R	R	R	R	R	R
34	Bromid (K) solution	R	R	R	R	R	R	R	R	R	R	R	R
35	Bromine	R	R	R	R	R	R	R	R	R	R	R	R
36	Bromine liquid, tech.	R	R	R	R	R	R	R	R	R	R	R	R
37	Bromine water, saturated aqueous	R	R	R	R	R	R	R	R	R	R	R	R
38	Butyl acetate	R	R	ND	R	R	R	R	R	R	R	R	R
39	Calcium chloride	R	R	ND	R	R	R	R	R	R	R	R	R
40	Carbon disulphide	R	R	R	R	R	R	R	R	R	R	R	R
41	Carbonic acid	R	R	ND	R	R	R	R	R	R	R	R	R
42	Carbon tetrachloride	R	R	R	R	R	R	R	R	R	R	R	R
43	Caustic soda & potash	R	R	R	R	R	R	R	R	R	R	R	R
44	Cellulose paint	R	R	R	R	R	R	R	R	R	R	R	R
45	Chlorates of Na, K, Ba	R	R	R	R	R	R	R	R	R	R	R	R
46	Chlorine, dry	R	R	R	R	R	R	R	R	R	R	R	R
47	Chlorine, wet	R	R	R	R	R	R	R	R	R	R	R	R

CHEMICAL RESISTANT TABLE FOR FLOUOROPOLYMERS

Row	Chemical	ECTFE			FEP			PFA			PTFE		
		20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C
48	Chlorides of Na, K, Ba	R	R	R	R	R	R	R	R	R	R	R	R
49	Chloroacetic acid	R	R	ND	R	R	R	R	R	R	R	R	R
50	chlorobenzene	R	R	R	R	R	R	R	R	R	R	R	R
51	Chloroform	R	R	R	R	R	R	R	R	R	R	R	R
52	Chlorosulphonic acid	R	R	R	R	R	R	R	R	R	R	R	R
53	Chromic acid (%80)	R	R	R	R	R	R	R	R	R	R	R	R
54	Citric acid	R	R	R	R	R	R	R	R	R	R	R	R
55	Copper salts (most)	R	R	ND	R	R	R	R	R	R	R	R	R
56	Cresylic acids(%50)	R	R	ND	R	R	R	R	R	R	R	R	R
57	Cyclohexane	R	R	ND	R	R	R	R	R	R	R	R	R
58	Detergents, synthetic	R	R	R	R	R	R	R	R	R	R	R	R
59	Emulsifiers, concentrated	R	R	R	R	R	R	R	R	R	R	R	R
60	Ether	R	R	R	R	R	R	R	R	R	R	R	R
61	Fatty acids (> C6)	R	R	R	R	R	R	R	R	R	R	R	R
62	Ferric chloride	R	R	R	R	R	R	R	R	R	R	R	R
63	Ferrous sulphate	R	R	R	R	R	R	R	R	R	R	R	R
64	Fluorinated refrigerants	R	R	ND	R	R	R	R	R	R	R	R	R
65	Flourine, dry	R	R	NR	R	R	NR	R	R	NR	R	R	NR
66	Flourine, wet	R	R	R	ND	ND	ND	ND	ND	ND	ND	ND	ND
67	Fluorosilic acid	R	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
68	Formaldehyde (%40)	R	R	R	R	R	R	R	R	R	R	R	R
69	Formic acid	R	R	R	R	R	R	R	R	R	R	R	R
70	Fruit juices	R	R	R	R	R	R	R	R	R	R	R	R
71	Gelatine	R	R	R	R	R	R	R	R	R	R	R	R
72	Glycerine	R	R	R	R	R	R	R	R	R	R	R	R
73	Glycols	R	R	R	R	R	R	R	R	R	R	R	R
74	Glycol, ethylene	R	R	NR	R	R	R	R	R	R	R	R	R
75	Glycolic acid	R	R	R	R	R	R	R	R	R	R	R	R
76	Hexamethylene diamine	R	R	ND	R	R	R	R	R	R	R	R	R
77	Hexamine	R	R	NR	R	R	R	R	R	R	R	R	R
78	Hydrazine	R	R	ND	R	R	R	R	R	R	R	R	R
79	Hydrobromic acid (%50)	R	R	R	R	R	R	R	R	R	R	R	R
80	Hydrochloric acid (%10)	R	R	R	R	R	R	R	R	R	R	R	R
81	Hydrochloric acid (conc.)	R	R	ND	R	R	R	R	R	R	R	R	R
82	Hydrocyanic acid	R	R	R	R	R	R	R	R	R	R	R	R
83	Hydrofluoric acid (%40)	R	R	R	R	R	R	R	R	R	R	R	R
84	Hydrofluoric acid (%75)	R	R	R	R	R	R	R	R	R	R	R	R
85	Hydrogen peroxide (%30)	R	R	R	R	R	R	R	R	R	R	R	R
86	Hydrogen peroxide (%30 - %90)	R	R	R	R	R	R	R	R	R	R	R	R
87	Hydrogen sulphide	R	R	R	R	R	R	R	R	R	R	R	R
88	Hypochlorites	R	R	R	R	R	R	R	R	R	R	R	R
89	Hypochlorites (Na %14-12)	R	R	R	R	R	R	R	R	R	R	R	R
90	ISO- butyl- acetate	R	R	ND	R	R	R	R	R	R	R	R	R
91	Lactic acid (%90)	R	R	R	R	R	R	R	R	R	R	R	R
92	Lead acetate	R	R	R	R	R	R	R	R	R	R	R	R
93	Lead perchlorate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
94	Lime (CaO)	R	R	R	R	R	R	R	R	R	R	R	R

CHEMICAL RESISTANT TABLE FOR FLOUROROPOLYMERS

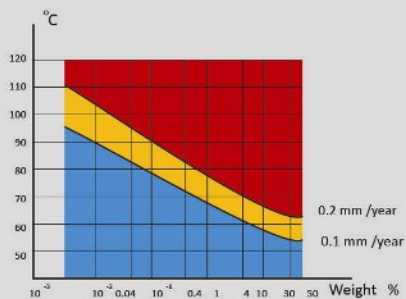
Row	Chemical	ECTFE			FEP			PFA			PTFE		
		20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C
95	Maleic acid	R	R	R	R	R	R	R	R	R	R	R	R
96	Manganate, potassium (K)	R	R	R	R	R	R	R	R	R	R	R	R
97	Meat juices	R	R	R	R	R	R	R	R	R	R	R	R
98	Mercuric chloride	R	R	R	R	R	R	R	R	R	R	R	R
99	Mercury	R	R	R	R	R	R	R	R	R	R	R	R
100	Methanol	R	R	R	R	R	R	R	R	R	R	R	R
101	Methylene chloride	R	R	R	R	R	R	R	R	R	R	R	R
102	Milk products	R	R	R	R	R	R	R	R	R	R	R	R
103	Moist air	R	R	R	R	R	R	R	R	R	R	R	R
104	Molasses	R	R	R	R	R	R	R	R	R	R	R	R
105	Monoethanolamine	R	R	NR	R	R	NR	R	R	NR	R	R	NR
106	Naptha	R	R	R	R	R	R	R	R	R	R	R	R
107	Napthalene	R	R	R	R	R	R	R	R	R	R	R	R
108	Nickel salts	R	R	R	R	R	R	R	R	R	R	R	R
109	Nitrates of Na, K and NH3	R	R	R	R	R	R	R	R	R	R	R	R
110	Nitric acid (< %25)	R	R	R	R	R	R	R	R	R	R	R	R
111	Nitric acid (< %50)	R	R	NR	R	R	R	R	R	R	R	R	R
112	Nitric acid (< %90)	R	R	NR	R	R	R	R	R	R	R	R	R
113	Nitric acid (fuming)	R	R	R	R	R	R	R	R	R	R	R	R
114	Nitrite (Na)	R	R	R	R	R	R	R	R	R	R	R	R
115	Nitrobenzene	R	R	ND	R	R	R	R	R	R	R	R	R
116	Oils, diesel	R	R	R	R	R	R	R	R	R	R	R	R
117	Oils, essential	R	R	R	R	R	R	R	R	R	R	R	R
118	Oils, lubricating + aromatic additives	R	R	R	R	R	R	R	R	R	R	R	R
119	Oils, mineral	R	R	R	R	R	R	R	R	R	R	R	R
120	Oils, vegetable and animal	R	R	R	R	R	R	R	R	R	R	R	R
121	Oxalic acid	R	ND	ND	R	R	R	R	R	R	R	R	R
122	Ozone	R	R	R	R	R	R	R	R	R	R	R	R
123	Paraffin wax	R	R	R	R	R	R	R	R	R	R	R	R
124	Perchloric acid	R	R	R	R	R	R	R	R	R	R	R	R
125	Petroleum spirits	R	R	ND	R	R	ND	R	R	ND	R	R	ND
126	Phenol	R	R	R	R	R	R	R	R	R	R	R	R
127	Phosphoric acid (%20)	R	R	R	R	R	R	R	R	R	R	R	R
128	Phosphoric acid (%50)	R	R	R	R	R	R	R	R	R	R	R	R
129	Phosphoric acid (%95)	R	R	R	R	R	R	R	R	R	R	R	R
130	Phosphorous chlorides	R	R	R	R	R	R	R	R	R	R	R	R
131	Phosphorous pentoxide	R	R	R	ND	ND	ND	ND	ND	ND	ND	ND	ND
132	Phthalic acid	R	R	R	R	R	R	R	R	R	R	R	R
133	Picric acid	R	R	NR	R	R	R	R	R	R	R	R	R
134	Pyridine	R	R	R	R	R	R	R	R	R	R	R	R
135	Salicyl aldehyde	R	R	R	R	R	R	R	R	R	R	R	R
136	Sea water	R	R	R	R	R	R	R	R	R	R	R	R
137	Silicic acid	R	R	R	R	R	R	R	R	R	R	R	R
138	Silicone fluids	R	R	R	R	R	R	R	R	R	R	R	R
139	Silver nitrate	R	R	R	R	R	R	R	R	R	R	R	R
140	Sodium peroxide	R	R	R	R	R	R	R	R	R	R	R	R
141	Sodium silicate	R	R	R	R	R	R	R	R	R	R	R	R

CHEMICAL RESISTANT TABLE FOR FLOUROROPOLYMERS

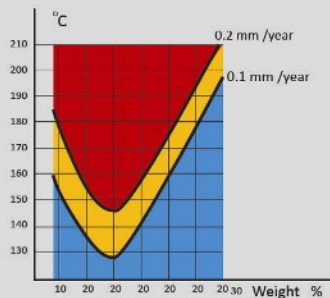
Row	Chemical	ECTFE			FEP			PFA			PTFE		
		20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C	20 °C	60 °C	100 °C
142	Sodium sulphide	R	R	R	R	R	R	R	R	R	R	R	R
143	Stannic chloride	R	R	R	R	R	R	R	R	R	R	R	R
144	Starch	R	R	R	R	R	R	R	R	R	R	R	R
145	Suger, syrups & jams	R	R	R	R	R	R	R	R	R	R	R	R
146	Sulphamic acid	R	R	R	R	R	R	ND	ND	ND	ND	ND	ND
147	Sulphites	R	R	R	R	R	R	R	R	R	R	R	R
148	Sulphonic acid	R	R	R	ND	ND	ND	R	R	R	R	R	R
149	Sulphates (Na, K, Mg, Ca)	R	R	R	R	R	R	R	R	R	R	R	R
150	Sulphites	R	R	R	R	R	R	R	R	R	R	R	R
151	Sulphur	R	R	R	R	R	R	R	R	R	R	R	R
152	Sulphur dioxide, dry	R	R	R	R	R	R	R	R	R	R	R	R
153	Sulphur dioxide, wet	R	R	R	R	R	R	R	R	R	R	R	R
154	Sulphur dioxide, (%96)	R	R	R	R	R	R	R	R	R	R	R	R
155	Sulphur trioxide	R	R	R	R	R	R	R	R	R	R	R	R
156	Sulphuric acid (< %50)	R	R	R	R	R	R	R	R	R	R	R	R
157	Sulphuric acid (< %70)	R	R	R	R	R	R	R	R	R	R	R	R
158	Sulphuric acid (< %95)	R	R	R	R	R	R	R	R	R	R	R	R
159	Sulphuric acid, fuming	R	R	R	R	R	R	R	R	R	R	R	R
160	Sulphur chlorides	R	R	R	R	R	R	R	R	R	R	R	R
161	Tallow	R	R	R	R	R	R	R	R	R	R	R	R
162	Tannic acid (%10)	R	R	R	R	R	R	R	R	R	R	R	R
163	Tartaric acid	R	R	R	R	R	R	R	R	R	R	R	R
164	Trichorethylene	R	R	R	R	R	R	R	R	R	R	R	R
165	Urea (%30)	R	R	R	R	R	R	R	R	R	R	R	R
166	Vinegar	R	R	R	R	R	R	R	R	R	R	R	R
167	Water, distilled	R	R	R	R	R	R	R	R	R	R	R	R
168	Water, soft	R	R	R	R	R	R	R	R	R	R	R	R
169	Water, hard	R	R	R	R	R	R	R	R	R	R	R	R
170	Wetting agents (< %5)	R	R	R	R	R	R	R	R	R	R	R	R
171	Yeast	R	R	R	R	R	R	R	R	R	R	R	R
172	Zinc chloride	R	R	R	R	R	R	R	R	R	R	R	R

Resistant	R
Limit Resistance	LR
Not Recommended	NR
No Data	ND

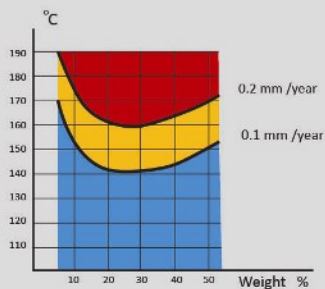
جهت اطلاع از حداکثر دمای کارکرد هر کدام از فلورو پلیمرها، به کاتالوگ فلوروپلیمرهای آذر جام مراجعه و یا با کارشناسان این شرکت در تماس باشید.



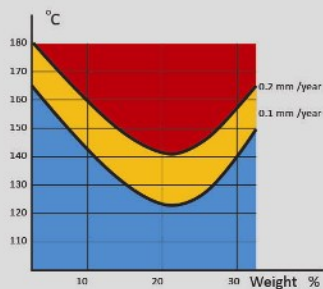
NaOH



H₂SO₄

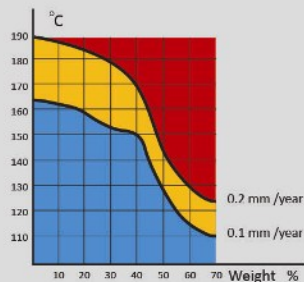
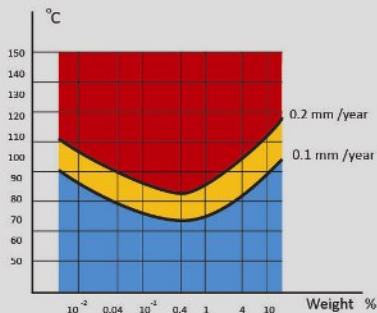
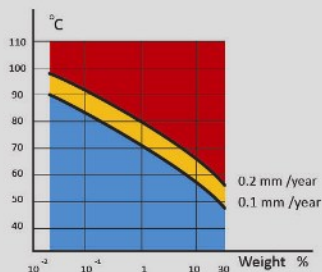
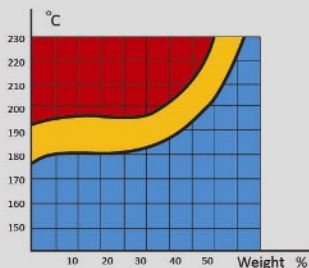


HNO₃

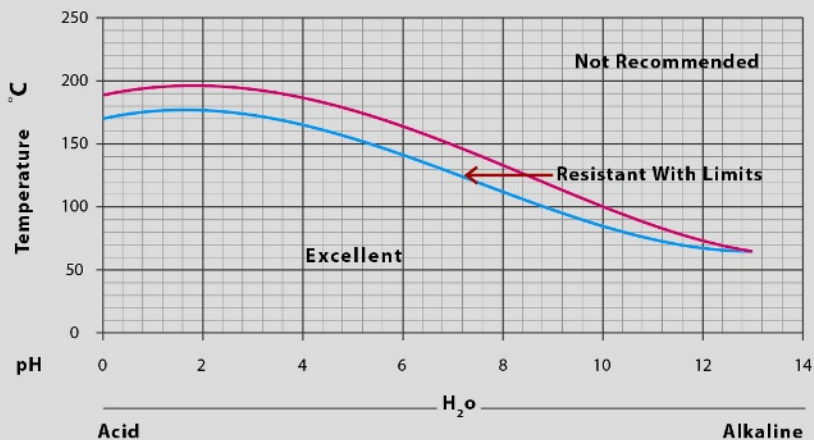


HCl

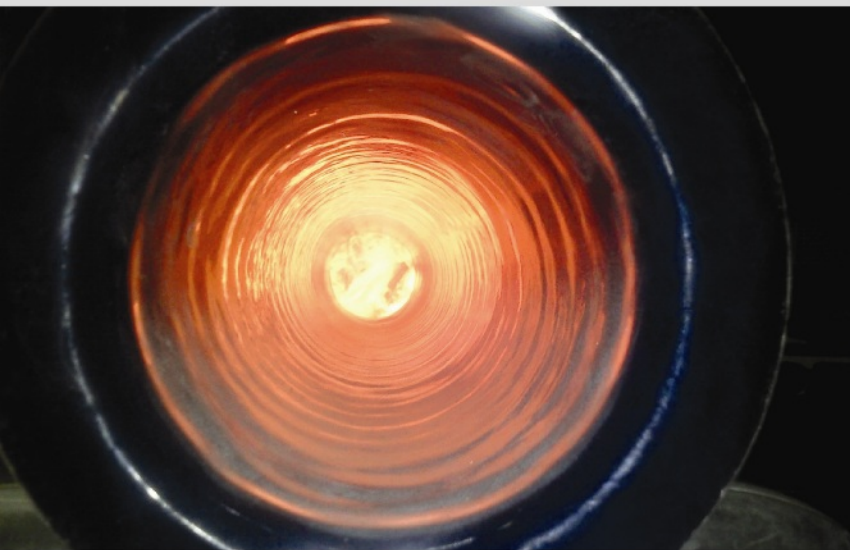
■ مقاومت به خوردگی گلاس در شرایط دمایی نسبت به غلظت

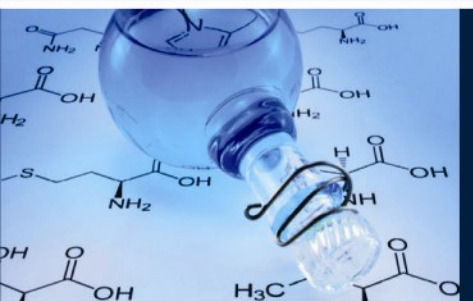


■ مقاومت به خوردگی گلاس در شرایط دمایی نسبت به غلظت



مقاومت به خوردگی گلاس در شرایط دمایی نسبت به pH محیط





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