Temperature for Initiation of Crevice Corrosion in Ferric Chloride ($FeCl_3 \cdot 6H_2O$)

10% $FeCl_3 \cdot 6H_2O$, per ASTM G 48 Practice B, (PRE) N = Cr + 3.3Mo +30N

Alloy	Mo, %	Temperature C	Temperature F	Pitting Resistance Equivalent, (PRE) N	Ref
316L	2.1	-3	27	23	1
825	2.7	-3	27	30	1
317L	3.2	2	35	29	1
2205	3.1	20	68	38	1
317 LXN™	4.4	20	68	34	1
904L	4.4	24	75	35	1
G	6.5	30	86	43	1
AL-6XN	6.2	43	110	48	1
625	9.0	45	113	51	1
C-276	15.4	55	130	66	1

Corrosion Rates in Hydrochloric Acid (HCl)

Alloy	Notes	Concentration, %	Temperature C	Temperature F	Time	Corrosion Rate mm/yr	Corrosion Rate mils/yr	Ref
17-4PH	condition H 1075	0.5	35	95	5x48hr	0.08	3	13
17-4PH	condition H 1075	1	35	95	5x48hr	13.2	518	13
2205	plus 0.3% $FeCl_3$	1	30	86	96hr	0.01	0.2	10
2205	plus 0.3% $FeCl_3$	1	45	113	96hr	0.20	7.8	10
2205	plus 0.3% $FeCl_3$	1	55	131	96hr	0.38	15	10
2507	—	1	104	218	—	0.10	4	14
2507	—	3	30	86	—	0.10	4	14
317L	—	1	boiling		—	1.38	54.3	1
AL-6XN	—	1	boiling		—	1.49	58.7	1
AL-6XN	—	2	23	78	—	0.003	0.12	1
AL-6XN	—	3	23	78	—	0.003	0.12	1
AL-6XN	—	4	23	78	—	0.003	0.12	1
AL-6XN	—	5	23	78	—	0.102	4.02	1
AL-6XN	—	6	23	78	—	0.216	8.82	1
AL-6XN	—	8	23	78	—	0.270	10.6	1
AL-6XN	—	3	52	126	—	0.553	21.8	1
AL-6XN	—	4	52	126	—	0.348	13.7	1
AL-6XN	—	5	52	126	—	1.698	66.9	1
AL-6XN	—	6	52	126	—	1.935	76.2	1
AL-6XN	—	pH 1.5	65.5	150	—	0.0009	0.035	1
AL-6XN	—	pH 1.0	65.5	150	—	0.0010	0.039	1
AL-6XN	—	pH 0.5	65.5	150	—	0.9139	36.0	1
AL-6XN	—	pH 1.0	79.4	175	—	0.0009	0.035	1
AL-6XN	—	pH 1.5	93.3	200	—	0.0008	0.031	1
AL-6XN	—	pH 1.0	93.3	200	—	0.0008	0.031	1
825	—	5	20	68	—	0.124	4.9	12
825	—	5	220	104	—	0.452	17.8	12
825	—	5	66	150	—	2.0	79	12
825	—	10	20	68	—	0.183	7.2	12
825	—	10	220	104	—	0.472	18.6	12
825	—	10	66	150	—	2.59	102	12
825	—	15	20	68	—	0.185	7.3	12
825	—	20	220	104	—	1.52	60	12
825	—	concentrated	220	104	—	12.2	480	12
825	—	concentrated	66	150	—	28.7	1130	12

Corrosion Tables, continued

Corrosion Rates in Hydrochloric Acid (HCl) continued

Alloy	Notes	Concentration, %	Temperature C	Temperature F	Time	Corrosion Rate mm/yr	Corrosion Rate mils/yr	Ref
RA333	—	2	27	80	—	0.17	6.6	3
RA333	—	5	27	80	—	0.22	8.5	3
RA333	—	15	27	80	—	0.17	6.6	3
RA333	—	25	27	80	—	0.16	6.4	3
RA333	—	37	27	80	—	0.58	23	3
RA333	—	2	66	150	—	1.5	60	3
RA333	—	5	66	150	—	5.0	196	3
RA333	—	15	66	150	—	4.9	194	3
C-276	—	1	boiling		—	0.25	10	7
C-276	—	1	boiling		—	0.34	13.4	7
C-276	—	1.5	boiling		—	0.74	29	7
C-276	—	2	90	194	—	0.025	1	7
C-276	—	2	boiling		—	1.55	61	7
C-276	—	3	boiling		—	1.78	70	7
C-22	—	1	boiling		—	0.076	3	7
C-22	—	1.5	boiling		—	0.28	11	7
C-22	—	2	90	194	—	nil	nil	7
C-22	—	2	boiling		—	1.55	61	7
C-22	—	3	90	194	—	<1	<1	7
C-22	—	3	boiling		—	2.13	84	7
625	—	5	66	150	—	1.8	71	16
625	—	10	66	150	—	2.1	81	16
625	—	15	66	150	—	1.7	65	16
625	—	20	66	150	—	1.3	50	16
625	—	25	66	150	—	1.0	38	16
625	—	30	66	150	—	0.9	34	16
625	—	concentrated	66	150	—	0.4	15	16
400	no aeration	0.5	boiling		10days	0.74	29	15
400	no aeration	1	boiling		10days	1.07	42	15
400	no aeration	5	boiling		10days	1.12	44	15
B-2	—	1	boiling		120hr	0.02	0.8	11
B-2	—	2	boiling		120hr	0.08	3	11
B-2	—	5	boiling		120hr	0.13	5	11
B-2	—	10	boiling		120hr	0.18	7	11
B-2	—	15	boiling		120hr	0.28	11	11
B-2	—	20	boiling		120hr	0.38	15	11

Corrosion Rates in Hydrofluoric Acid (HF)

Alloy	Notes	Concentration, %	Temperature C	Temperature F	Time	Corrosion Rate mm/yr	Corrosion Rate mils/yr	Ref
316	—	3	21	70	—	1.25	49.1	1
316	—	5	21	70	—	2.33	91.8	1
316	—	5	40	104	—	7.8	306	1
316	—	1	50	122	—	1.82	71.8	1
316	—	2	50	122	—	5.3	209	1
316	—	5	50	122	—	15.9	626	1