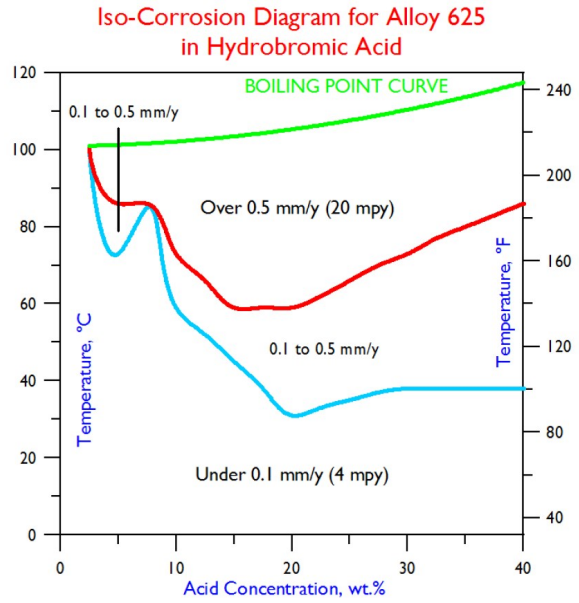
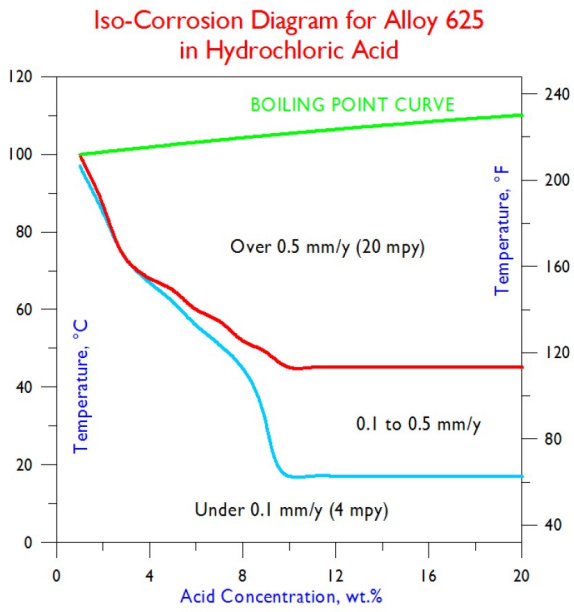
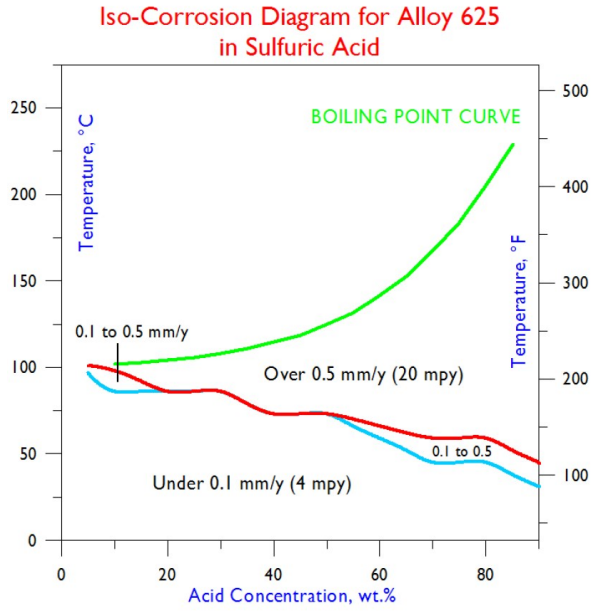
HAYNES® 625 alloy

Iso-Corrosion Diagrams

Each of these iso-corrosion diagrams was constructed using numerous corrosion rate values, generated at different acid concentrations and temperatures. The blue line represents those combinations of acid concentration and temperature at which a corrosion rate of 0.1 mm/y (4 mils per year) is expected, based on laboratory tests in reagent grade acids. Below the line, rates under 0.1 mm/y are expected. Similarly, the red line indicates the combinations of acid concentration and temperature at which a corrosion rate of 0.5 mm/y (20 mils per year) is expected. Above the line, rates over 0.5 mm/y are expected. Between the blue and red lines, corrosion rates are expected to fall between 0.1 and 0.5 mm/y.







Hydrobromic Acid

Concentration	50°F	75°F	100°F	125°F	150°F	175°F	200°F	225°F	Boiling
Wt. %	10°C	24°C	38°C	52°C	66°C	79°C	93°C	107°C	

2.5	-	-	-	-	<0.01	-	<0.01	-	<0.01
5	-	-	-	-	<0.01	0.13	0.6	-	-
7.5	-	-	-	-	<0.01	<0.01	0.93	-	-
10	-	-	-	-	0.15	0.82	-	-	-
15	-	-	<0.01	0.3	0.64	-	-	-	-
20	-	0.1	0.16	0.33	0.65	-	-	-	-
25	-	-	-	-	-	-	-	-	-
30	-	-	0.11	0.21	0.34	0.72	-	-	-
40	-	-	0.08	0.15	0.25	0.42	0.79	-	-

All corrosion rates are in millimeters per year (mm/y); to convert to mils (thousandths of an inch) per year, divide by 0.0254.
Data are from Corrosion Laboratory Job 17-04.
All tests were performed in reagent grade acids under laboratory conditions; field tests are encouraged prior to industrial use.

Hydrochloric Acid

Concentration	50°F	75°F	100°F	125°F	150°F	175°F	200°F	225°F	Boiling
Wt. %	10°C	24°C	38°C	52°C	66°C	79°C	93°C	107°C	
1	-	-	-	-	-	<0.01	<0.01	-	0.23
1.5	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-
2.5	-	-	-	-	-	-	-	-	-
3	-	-	<0.01	<0.01	<0.01	2.07	-	-	-
3.5	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-
4.5	-	-	-	-	-	-	-	-	-
5	-	-	<0.01	<0.01	-	4.65	-	-	-
7.5	-	-	0.07	0.49	-	-	-	-	-
10	<0.01	0.15	0.3	1.16	-	-	-	-	-
15	0.06	0.19	0.4	1.06	-	-	-	-	-
20	0.06	0.16	0.36	0.82	-	-	-	-	-

All corrosion rates are in millimeters per year (mm/y); to convert to mils (thousandths of an inch) per year, divide by 0.0254.
Data are from Corrosion Laboratory Jobs 56-97 and 3-98.
All tests were performed in reagent grade acids under laboratory conditions; field tests are encouraged prior to industrial use.

Sulfuric Acid

Concentration	75°F	100°F	125°F	150°F	175°F	200°F	225°F	250°F	275°F	300°F	350°F	Boiling
Wt. %	24°C	38°C	52°C	66°C	79°C	93°C	107°C	121°C	135°C	149°C	177°C	
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-

5	-	-	-	-	<0.01	0.06	-	-	-	-	-	0.4
10	-	-	-	-	0.01	0.24	-	-	-	-	-	1.05
20	-	-	-	-	0.02	0.58	-	-	-	-	-	2.84
30	-	-	-	0.01	0.03	0.68	-	-	-	-	-	-
40	-	-	<0.01	0.02	0.58	-	-	-	-	-	-	-
50	-	-	-	0.01	0.89	-	-	-	-	-	-	-
60	-	-	<0.01	0.48	0.92	-	-	-	-	-	-	-
70	-	<0.01	0.23	0.63	-	-	-	-	-	-	-	-
80	-	0.05	0.31	0.91	2.54	-	-	-	-	-	-	-
90	<0.01	0.17	1.26	-	6.97	-	-	-	-	-	-	-
96	-	-	-	-	-	-	-	-	-	-	-	-

All corrosion rates are in millimeters per year (mm/y); to convert to mils (thousandths of an inch) per year, divide by 0.0254.

Data are from Corrosion Laboratory Jobs 57-97 and 4-98.

All tests were performed in reagent grade acids under laboratory conditions; field tests are encouraged prior to industrial use.