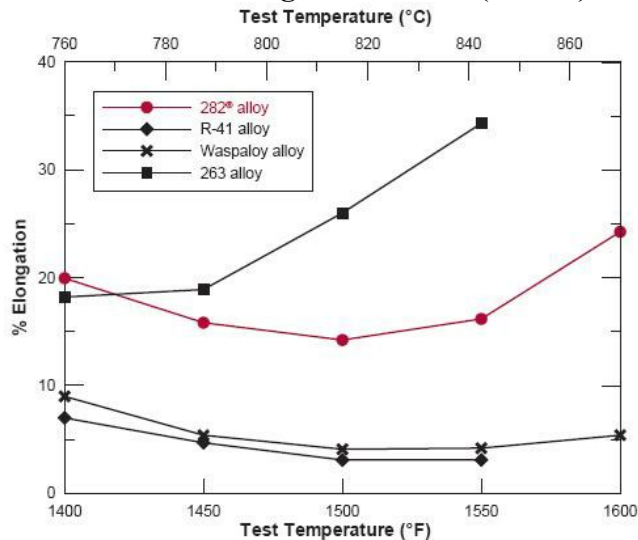


HAYNES[®] 282[®] alloy

Strain-Age Cracking Resistance

Resistance to strain-age cracking is a major attribute of HAYNES[®] 282[®] alloy. As indicated in the chart below, 282[®] alloy approaches the well-known 263 alloy in this regard, and possesses much higher resistance to strain-age cracking than other nickel superalloys in its strength class (Waspaloy and R-41 alloys).

Resistance to Strain-Age Cracking as Measured by the Controlled Heating-Rate Tensile (CHRT) Test



The CHRT test is an excellent measure of the resistance of gamma-prime strengthened superalloys to strain-age cracking. Samples of thickness 0.063" (1.6 mm), originally in the solution annealed condition, are heated to the test temperature at a rate of 25-30°F (14-17°C) per minute, this being representative of a typical post-weld heat treatment. Tests are performed for each alloy over a range of temperatures. The susceptibility to strain-age cracking is related to the minimum tensile elongation observed within that temperature range (the higher the minimum elongation, the greater is the resistance to strain-age cracking).

For further information regarding this test, please refer to:

- . R.W. Fawley, M. Prager, J.B. Carlton, and G. Sines, *WRC Bulletin No. 150*, Welding Research Council, New York, 1970.
- . M.D. Rowe, "Ranking the Resistance of Wrought Superalloys to Strain-Age Cracking", *Welding Journal*, 85 (2), pp. 27-s to 34-s, 2006.

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