

HAYNES[®] 282[®] alloy

Aging Kinetics

A key attribute of HAYNES[®] 282[®] alloy is its sluggish gamma-prime precipitation kinetics which are highly desirable for improved fabricability for two main reasons. One, the formation of gamma-prime during heat treatment is a key factor in strain age-cracking. Two, it allows sufficient time for the alloy to cool after solution annealing without formation of the gamma-prime phase which would reduce cold formability. The chart below indicates the increase in the room-temperature hardness (an indicator of the precipitation of the gamma-prime phase) with increasing aging time at 1500°F (816°C) for 282 alloy and several other gamma-prime strengthened alloys. 282 alloy was found to have a sluggish response, similar to the readily fabricable 263 alloy. The less fabricable R-41 and Waspaloy alloys hardened much more quickly.

Isothermal Hardening Kinetics
Temperature: 1500°F (816°C), Starting Material: Solution Annealed Sheet

