

HAYNES® 282® Alloy Powder

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HAYNES® 282® alloy powder is available for evaluation in laser additive manufacturing trials. Praxair Surface Technologies is producing 282 alloy vacuum induction melted argon atomized powder exclusively for Haynes International. Powder composition meets specification AMS 5915 (composition only).

Nominal Chemical Composition, Weight %

Ni	Cr	Co	Mo	Ti	Al	Fe	Mn	Si	C	B
57 ^a	20	10	8.5	2.1	1.5	1.5*	0.3*	0.15*	0.06	0.005

^a As Balance *Maximum

Alloy Description:

HAYNES 282 alloy is an advanced, gamma-prime strengthened superalloy that was developed for applications in aero- and land-based gas turbines, and other high-performance, high-temperature environments. HAYNES 282 alloy is a unique Ni-Cr-Co-Mo-Al-Ti superalloy, which combines exceptional high-temperature properties with good weldability and fabricability. At high temperatures, even as high as 900°C (1650°F), the new alloy is stronger in creep strength than HAYNES® Waspaloy and approaches the creep strength of HAYNES® R-41 alloy. Further, the 282 alloy has much improved thermal stability, weldability, and fabricability compared to Waspaloy and R-41 alloys. In particular, the 282 alloy was designed to have improved resistance to strain-age cracking, a welding problem common with many gamma-prime strengthened alloys.

Creep-Rupture Properties of Heat Treated Gamma-Prime Strengthened Alloys (Sheet)

Property	Test Temperature		Alloy			
	°F	°C	282®	263	R-41	Waspaloy
Stress-to-Produce 1% Creep in 1,000 hours ksi (MPa)	1200	649	79 (545)	58 (400)	84 (579)	67 (462)
	1300	704	53 (365)	41 (283)	59 (407)	46 (317)
	1400	760	35 (241)	25 (172)	34 (234)	28 (193)
	1500	816	21 (145)	12 (83)	18 (124)	16 (110)
	1600	871	10 (69)	6 (41)	9 (62)	7 (48)
	1700	927	5 (34)	3 (21)	5 (34)	3 (21)
Stress-to-Produce Rupture in 1,000 hours ksi (MPa)	1200	649	80 (552)	64 (441)	90 (621)	80 (552)
	1300	704	56 (386)	45 (310)	68 (469)	58 (400)
	1400	760	38 (262)	28 (193)	43 (296)	36 (248)
	1500	816	23 (159)	15 (103)	24 (165)	20 (138)
	1600	871	12 (83)	7 (48)	13 (90)	7 (48)
	1700	927	6 (41)	4 (28)	7 (48)	3 (21)

Please contact us at the numbers listed below or at haynesmarketing@haynesintl.com for HAYNES 282 alloy powder sizes and availability.

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