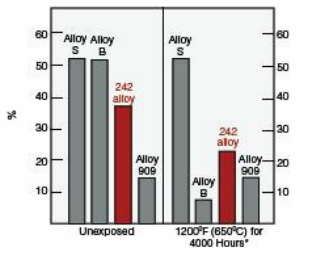
HAYNES® 242® alloy

Thermal Stability

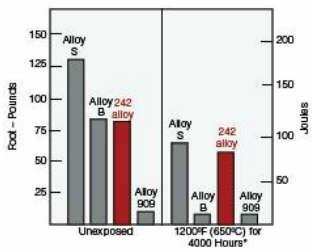
HAYNES® 242® alloy has excellent retained ductility and impact strength after long-term thermal exposure at temperature. Combined with its high strength and low thermal expansion characteristics, this makes for very good containment properties in gas turbine static structures. The graphs below show the retained room-temperature tensile elongation and impact strength for 242® alloy versus other relevent materials after a 4000 hour exposure at 1200°F (650°C).

Comparative Retained Ductility and Impact Strength

Room-Temperature Tensile Elongation



Room Temperature Impact Strength



Room-Temperature Properties after Exposure at 1200°F (649°C)*

Exposure Time	0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation	Reduction of Area	Charpy V-Notch Strength	
h	ksi	MPa	ksi	MPa	%	%	ft.-lbs.	J
0	110	758	179	1234	39	44	66	89
1000	119	820	194	1338	28	38	41	56
4000	122	841	196	1351	25	37	31	42
8000	121	834	193	1331	24	39	26	35

*Samples age hardened 1200°F (649°C) 24 h.
Duplicate tests.

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