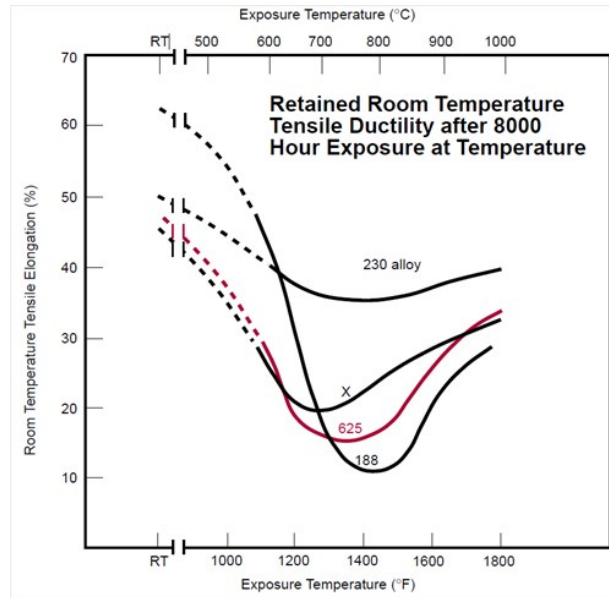


# HAYNES<sup>®</sup> 625 alloy

## Thermal Stability

HAYNES<sup>®</sup> 625 alloy is similar to the solid-solution-strengthened superalloys, such as HAYNES<sup>®</sup> 188 alloy or HASTELLOY<sup>®</sup> X alloy, which will precipitate deleterious phases upon long-term exposure at intermediate temperatures. In this case, the phase in question is NiCb delta-phase which serves to impair both tensile ductility and impact strength. For applications where thermal stability is important, 230<sup>®</sup> alloy is recommended.



**Room Temperature Properties After Thermal Exposure, Plate**

Exposure		h	0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation %	Impact	
°F	°C		ksi	MPa	ksi	MPa		ft.-lb.	J
As-Annealed*		-	66.2	455	127.7	880	46	81	110
1200	650	1000	122.3	845	165.0	1140	28	11	15
		4000	117.9	815	163.6	1130	24	8	11
		8000	117.8	810	164.2	1130	18	5	7
		16000	118.5	815	165.4	1140	12	4	5
1400	760	1000	95.5	660	142.9	985	17	5	7
		4000	104.1	720	145.5	1005	12	4	5
		8000	97.4	670	142.6	985	13	5	7
		16000	96.1	665	140.4	970	12	4	5
1600	870	1000	68.3	470	130.0	895	30	12	16
		4000	66.4	460	130.0	895	29	11	15
		8000	63.7	440	127.0	875	26	15	20
		16000	63.4	435	128.4	885	32	14	19

\*1875°F (1025°C), rapid cooled