

# HAYNES<sup>®</sup> HR-224<sup>®</sup> alloy

## Annealing Response After Cold Forming

**Effect of Cold Reduction on Room Temperature Tensile Properties\***

Percentage Cold Reduction	Subsequent Anneal Temperature	Ultimate Tensile Strength		0.2% Offset Yield Strength		Elongation	Hardness
		ksi	MPa	ksi	MPa		
%	-					%	<b>Rb</b>
0	-	107.0	738	51.0	352	47	87
10	1900°F (1038°C) for 5 min	100.7	694	51.9	358	45.6	86
20		103.9	716	58.3	402	43.1	85
30		106.1	732	55.5	383	41.2	88
40		105.2	725	45.4	313	45.4	90
50		110.2	760	48.6	335	45.0	92
10	2000°F (1093°C) for 5 min	97.3	671	48.2	332	48.5	90
20		98.4	678	51.0	352	47.5	89
30		100.9	696	41.7	288	47.8	88
40		103.6	714	42.8	295	47.1	86
50		107.4	741	46.2	319	44.2	91

\*Based upon rolling reductions taken upon 0.120-inch (3.0mm) thick mill annealed sheet

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