

Haynes 263® alloy, cold rolled sheet, solution treated and aged

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Very good aged strength properties, excellent fabrication characteristics when annealed, excellent intermediate temperature tensile ductility, is not normally subject to strain age cracking, excellent forming and welding characteristics. Applications include aircraft and land-based turbine engine applications, low-temperature combustors, transition liners, and some ring components. Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Haynes-263-alloy-cold-rolled-sheet-solution-treated-and-aged.php

Physical Properties	Metric	English	Comments
Density	8.36 g/cc	0.302 lb/in ³	a RT

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1050 MPa	152000 psi	
	88.0 MPa	12800 psi	
	@Temperature 1095 °C	@Temperature 2003 °F	
	170 MPa	24700 psi	
	@Temperature 980 °C	@Temperature 1800 °F	
	350 MPa	50800 psi	
	@Temperature 870 °C	@Temperature 1600 °F	
	725 MPa	105000 psi	
	@Temperature 760 °C	@Temperature 1400 °F	
	835 MPa	121000 psi	
	@Temperature 650 °C	@Temperature 1200 °F	
Tensile Strength, Yield	855 MPa	124000 psi	
	@Temperature 540 °C	@Temperature 1000 °F	
	635 MPa	92100 psi	
	@Strain 0.200 %	@Strain 0.200 %	
	37.0 MPa	5370 psi	

Mechanical Properties	Metric @Strain 0.200 %, Temperature 1095 Â°C	English @Strain 0.200 %, Temperature 2003 Â°F	Comments
	87.0 MPa	12600 psi	
	@Strain 0.200 %, Temperature 980 Â°C	@Strain 0.200 %, Temperature 1800 Â°F	
	220 MPa	31900 psi	
	@Strain 0.200 %, Temperature 870 Â°C	@Strain 0.200 %, Temperature 1600 Â°F	
	515 MPa	74700 psi	
	@Strain 0.200 %, Temperature 760 Â°C	@Strain 0.200 %, Temperature 1400 Â°F	
	525 MPa	76100 psi	
	@Strain 0.200 %, Temperature 650 Â°C	@Strain 0.200 %, Temperature 1200 Â°F	
	540 MPa	78300 psi	
	@Strain 0.200 %, Temperature 540 Â°C	@Strain 0.200 %, Temperature 1000 Â°F	
Elongation at Break	35.7 %	35.7 %	in 51 mm
	33.1 %	33.1 %	
	@Temperature 760 Â°C	@Temperature 1400 Â°F	in 51 mm
	35.6 %	35.6 %	
	@Temperature 650 Â°C	@Temperature 1200 Â°F	in 51 mm
	38.6 %	38.6 %	
	@Temperature 540 Â°C	@Temperature 1000 Â°F	in 51 mm
	54.7 %	54.7 %	
	@Temperature 870 Â°C	@Temperature 1600 Â°F	in 51 mm
	58.7 %	58.7 %	
	@Temperature 1095 Â°C	@Temperature 2003 Â°F	in 51 mm
	71.8 %	71.8 %	
	@Temperature 980 Â°C	@Temperature 1800 Â°F	in 51 mm
Modulus of Elasticity	221 GPa	32100 ksi	RT

Mechanical Properties	143 GPa Metric	20700 ksi English	Comments
	@Temperature 1000 Â°C	@Temperature 1830 Â°F	
	154 GPa	22300 ksi	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	166 GPa	24100 ksi	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	176 GPa	25500 ksi	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	185 GPa	26800 ksi	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	192 GPa	27800 ksi	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	198 GPa	28700 ksi	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	205 GPa	29700 ksi	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	212 GPa	30700 ksi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	219 GPa	31800 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	11.1 Âµm/m-Â°C	6.17 Âµin/in-Â°F	
	@Temperature 25.0 - 100 Â°C	@Temperature 77.0 - 212 Â°F	
	12.1 Âµm/m-Â°C	6.72 Âµin/in-Â°F	
	@Temperature 25.0 - 200 Â°C	@Temperature 77.0 - 392 Â°F	
	12.7 Âµm/m-Â°C	7.06 Âµin/in-Â°F	
	@Temperature 25.0 - 300 Â°C	@Temperature 77.0 - 572 Â°F	

Thermal Properties	12.8 Åm/m-Å°C Metric	7.11 Åin/in-Å°F English	Comments
	@Temperature 25.0 - 400 Å°C	@Temperature 77.0 - 752 Å°F	
	13.6 Åm/m-Å°C	7.56 Åin/in-Å°F	
	@Temperature 25.0 - 500 Å°C	@Temperature 77.0 - 932 Å°F	
	18.1 Åm/m-Å°C	10.1 Åin/in-Å°F	
	@Temperature 1000 Å°C	@Temperature 1830 Å°F	
Thermal Conductivity	11.7 W/m-K	81.2 BTU-in/hr-ftÅ²-Å°F	RT
	13.0 W/m-K	90.2 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 100 Å°C	@Temperature 212 Å°F	
	14.7 W/m-K	102 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 200 Å°C	@Temperature 392 Å°F	
	16.3 W/m-K	113 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 300 Å°C	@Temperature 572 Å°F	
	18.0 W/m-K	125 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	
	19.7 W/m-K	137 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 500 Å°C	@Temperature 932 Å°F	
	21.4 W/m-K	149 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 600 Å°C	@Temperature 1110 Å°F	
	23.0 W/m-K	160 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 700 Å°C	@Temperature 1290 Å°F	
	24.7 W/m-K	171 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 800 Å°C	@Temperature 1470 Å°F	
	26.8 W/m-K	186 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 900 Å°C	@Temperature 1650 Å°F	
	28.5 W/m-K	198 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 1000	@Temperature 1830	

Thermal Properties	°C	°F	
Melting Point	Metric 1300 - 1355 °C	English 2370 - 2471 °F	Comments
Solidus	1300 °C	2370 °F	
Liquidus	1355 °C	2471 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.60 %	<= 0.60 %	
Carbon, C	0.060 %	0.060 %	
Chromium, Cr	20 %	20 %	
Cobalt, Co	20 %	20 %	
Copper, Cu	<= 0.20 %	<= 0.20 %	
Iron, Fe	<= 0.70 %	<= 0.70 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000115 ohm-cm	0.000115 ohm-cm	RT
	0.000116 ohm-cm	0.000116 ohm-cm	
	@Temperature 100 °C	@Temperature 212 °F	
	0.000118 ohm-cm	0.000118 ohm-cm	
	@Temperature 200 °C	@Temperature 392 °F	
	0.000120 ohm-cm	0.000120 ohm-cm	
	@Temperature 300 °C	@Temperature 572 °F	
	0.000122 ohm-cm	0.000122 ohm-cm	
	@Temperature 400 °C	@Temperature 752 °F	
	0.000124 ohm-cm	0.000124 ohm-cm	
	@Temperature 500 °C	@Temperature 932 °F	
	0.000124 ohm-cm	0.000124 ohm-cm	
	@Temperature 900 °C	@Temperature 1650 °F	
	0.000124 ohm-cm	0.000124 ohm-cm	
	@Temperature 1000 °C	@Temperature 1830 °F	
	0.000125 ohm-cm	0.000125 ohm-cm	

Electrical Properties	Metric	English	Comments
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	0.000126 ohm-cm	0.000126 ohm-cm	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	0.000126 ohm-cm	0.000126 ohm-cm	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	

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