

Haynes 25 alloy, cold worked sheet, 20% cold reduction, aged at 370Â°C (700Â°F) for 1 hour

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Excellent high-temperature strength with good resistance to oxidizing environments up to 980Â°C for prolonged exposures and excellent resistance to sulfidation and excellent resistance to metal galling. Applications in the aerospace industry, including parts in military and commercial gas turbine engines. Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Haynes-25-alloy-cold-worked-sheet-20-cold-reduction-aged-at-370C-700F-for-1-hour.php

Physical Properties	Metric	English	Comments
Density	9.13 g/cc	0.330 lb/inÂ³	at RT

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1250 MPa	181000 psi	
	295 MPa	42800 psi	
	@Temperature 980 Â°C	@Temperature 1800 Â°F	
	510 MPa	74000 psi	
	@Temperature 870 Â°C	@Temperature 1600 Â°F	
	745 MPa	108000 psi	
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	995 MPa	144000 psi	
	@Temperature 650 Â°C	@Temperature 1200 Â°F	
	1040 MPa	151000 psi	
	@Temperature 540 Â°C	@Temperature 1000 Â°F	
Tensile Strength, Yield	1050 MPa	152000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
	230 MPa	33400 psi	
	@Strain 0.200 %, Temperature 980 Â°C	@Strain 0.200 %, Temperature 1800 Â°F	
	405 MPa	58700 psi	

Mechanical Properties	Metric @Strain 0.200 %, Temperature 870 Â°C	English @Strain 0.200 %, Temperature 1600 Â°F	Comments
	670 MPa	97200 psi	
	@Strain 0.200 %, Temperature 760 Â°C	@Strain 0.200 %, Temperature 1400 Â°F	
	885 MPa	128000 psi	
	@Strain 0.200 %, Temperature 650 Â°C	@Strain 0.200 %, Temperature 1200 Â°F	
	890 MPa	129000 psi	
	@Strain 0.200 %, Temperature 540 Â°C	@Strain 0.200 %, Temperature 1000 Â°F	
Elongation at Break	17 %	17 %	in 51 mm
	2.0 %	2.0 %	
	@Temperature 760 Â°C	@Temperature 1400 Â°F	in 51 mm
	5.0 %	5.0 %	
	@Temperature 980 Â°C	@Temperature 1800 Â°F	in 51 mm
	6.0 %	6.0 %	
	@Temperature 870 Â°C	@Temperature 1600 Â°F	in 51 mm
	8.0 %	8.0 %	
	@Temperature 650 Â°C	@Temperature 1200 Â°F	in 51 mm
	19 %	19 %	
	@Temperature 540 Â°C	@Temperature 1000 Â°F	in 51 mm
Modulus of Elasticity	225 GPa	32600 ksi	RT
	146 GPa	21200 ksi	
	@Temperature 1000 Â°C	@Temperature 1830 Â°F	
	154 GPa	22300 ksi	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	163 GPa	23600 ksi	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	

Mechanical Properties	174 GPa Metric	25200 ksi English	Comments
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	181 GPa	26300 ksi	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	188 GPa	27300 ksi	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	197 GPa	28600 ksi	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	204 GPa	29600 ksi	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	214 GPa	31000 ksi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	222 GPa	32200 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
Charpy Impact	262 J	193 ft-lb	
	144 J	106 ft-lb	
	@Temperature 980 Â°C	@Temperature 1800 Â°F	
	148 J	109 ft-lb	
	@Temperature -196 Â°C	@Temperature -321 Â°F	
	163 J	120 ft-lb	
	@Temperature 870 Â°C	@Temperature 1600 Â°F	
	182 J	134 ft-lb	
	@Temperature -138 Â°C	@Temperature -216 Â°F	
	194 J	143 ft-lb	
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	212 J	156 ft-lb	
	@Temperature -78.0 Â°C	@Temperature -108 Â°F	
		170 ft-lb	

Mechanical Properties	Metric	English	Comments
	230 J	@ Temperature 1200 °F	
	@Temperature 650 °C	°F	
	243 J	179 ft-lb	
	@Temperature -29.0 °C	@Temperature -20.2 °F	
	273 J	201 ft-lb	
	@Temperature 540 °C	@Temperature 1000 °F	
	297 J	219 ft-lb	
	@Temperature 260 °C	@Temperature 500 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	12.3 Åµm/m-Å°C	6.83 Åµin/in-Å°F	
	@Temperature 25.0 - 100 Å°C	@Temperature 77.0 - 212 Å°F	
	12.9 Åµm/m-Å°C	7.17 Åµin/in-Å°F	
	@Temperature 25.0 - 200 Å°C	@Temperature 77.0 - 392 Å°F	
	13.6 Åµm/m-Å°C	7.56 Åµin/in-Å°F	
	@Temperature 25.0 - 300 Å°C	@Temperature 77.0 - 572 Å°F	
	14.3 Åµm/m-Å°C	7.94 Åµin/in-Å°F	
	@Temperature 25.0 - 500 Å°C	@Temperature 77.0 - 932 Å°F	
	14.3 Åµm/m-Å°C	7.94 Åµin/in-Å°F	
	@Temperature 25.0 - 400 Å°C	@Temperature 77.0 - 752 Å°F	
	14.6 Åµm/m-Å°C	8.11 Åµin/in-Å°F	
	@Temperature 25.0 - 600 Å°C	@Temperature 77.0 - 1110 Å°F	
	15.1 Åµm/m-Å°C	8.39 Åµin/in-Å°F	
	@Temperature 25.0 - 700 Å°C	@Temperature 77.0 - 1290 Å°F	
	15.8 Åµm/m-Å°C	8.78 Åµin/in-Å°F	
	@Temperature 25.0 - 800 Å°C	@Temperature 77.0 - 1470 Å°F	
	16.5 Åµm/m-Å°C	9.17 Åµin/in-Å°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 25.0 - 900 Â°C	@ Temperature 77.0 - 1650 Â°F	
	17.0 Âµm/m-Â°C	9.44 Âµin/in-Â°F	
	@Temperature 25.0 - 1000 Â°C	@Temperature 77.0 - 1830 Â°F	
Thermal Conductivity	9.40 W/m-K	65.2 BTU-in/hr-ftÂ²-Â°F	RT
	10.9 W/m-K	75.6 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	12.9 W/m-K	89.5 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	14.8 W/m-K	103 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	16.8 W/m-K	117 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	18.7 W/m-K	130 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	20.7 W/m-K	144 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	22.6 W/m-K	157 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	24.7 W/m-K	171 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	26.7 W/m-K	185 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	29.2 W/m-K	203 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 1000 Â°C	@Temperature 1830 Â°F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity			RT

Electrical Properties	0.0000886 ohm-cm Metric	0.0000886 ohm-cm English	Comments
	0.0000950 ohm-cm	0.0000950 ohm-cm	
	@Temperature 1000 °C	@Temperature 1830 °F	
	0.0001011 ohm-cm	0.0001011 ohm-cm	
	@Temperature 900 °C	@Temperature 1650 °F	
	0.0001066 ohm-cm	0.0001066 ohm-cm	
	@Temperature 700 °C	@Temperature 1290 °F	
	0.0001078 ohm-cm	0.0001078 ohm-cm	
	@Temperature 800 °C	@Temperature 1470 °F	

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