Haynes 25 alloy, room temperature after 15% cold reduction, 1175°C anneal for 5 minutes

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Excellent high-temperature strength with good resistance to oxidizing environments up to 980°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-room-temperature-after-15-cold-reduction-1175C-anneal-for-5-minutes.php

Physical Properties	Metric	English	Comments
Density	9.13 g/cc	0.330 lb/in³	at RT

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	266	266	Converted from Rockwell C hardness.
Hardness, Knoop	283	283	Converted from Rockwell C hardness.
Hardness, Rockwell C	26	26	
Hardness, Vickers	275	275	Converted from Rockwell C hardness.
Tensile Strength, Ultimate	1075 MPa	155900 psi	
Tensile Strength, Yield	505 MPa @Strain 0.200 %	73200 psi @Strain 0.200 %	
Elongation at Break	55.4 %	55.4 %	in 51 mm
Modulus of Elasticity	225 GPa	32600 ksi	RT
	146 GPa @Temperature 1000 °C	21200 ksi @Temperature 1830 °F	
	154 GPa @Temperature 900 °C	22300 ksi @Temperature 1650 °F	
	163 GPa @Temperature 800 °C	23600 ksi @Temperature 1470 °F	
	174 GPa @Temperature 700 °C	25200 ksi @Temperature 1290 °F	
	181 GPa	26300 ksi	

Mechanical Properties	Metric	English	Comments
	@Temperature 600 °C	@Temperature 1110 °F	
	188 GPa	27300 ksi	
	@Temperature 500 °C	@Temperature 932 °F	
	197 GPa	28600 ksi	
	@Temperature 400 °C	@Temperature 752 °F	
	204 GPa	29600 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	214 GPa	31000 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	222 GPa	32200 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
Charpy Impact	262 J	193 ft-lb	
	144 J	106 ft-lb	
	@Temperature 980 °C	@Temperature 1800 °F	
	148 J	109 ft-lb	
	@Temperature -196 °C	@Temperature -321 °F	
	163 J	120 ft-lb	
	@Temperature 870 °C	@Temperature 1600 °F	
	182 J	134 ft-lb	
	@Temperature -138 °C	@Temperature -216 °F	
	194 J	143 ft-lb	
	@Temperature 760 °C	@Temperature 1400 °F	
	212 J	156 ft-lb	
	@Temperature -78.0 °C	@Temperature -108 °F	
	230 J	170 ft-lb	
	@Temperature 650 °C	@Temperature 1200 °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	

Mechanical Properties	Metric	English	Comments
	@Temperature 260 °C	@Temperature 500 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	12.3 µm/m-°C @Temperature 25.0 - 100 °C	6.83 µin/in-°F @Temperature 77.0 - 212 °F	
	12.9 µm/m-°C @Temperature 25.0 - 200 °C	7.17 µin/in-°F @Temperature 77.0 - 392 °F	
	13.6 µm/m-°C @Temperature 25.0 - 300 °C	7.56 µin/in-°F @Temperature 77.0 - 572 °F	
	14.3 µm/m-°C @Temperature 25.0 - 500 °C	7.94 µin/in-°F @Temperature 77.0 - 932 °F	
	14.3 µm/m-°C @Temperature 25.0 - 400 °C	7.94 µin/in-°F @Temperature 77.0 - 752 °F	
	14.6 µm/m-°C @Temperature 25.0 - 600 °C	8.11 µin/in-°F @Temperature 77.0 - 1110 °F	
	15.1 µm/m-°C @Temperature 25.0 - 700 °C	8.39 µin/in-°F @Temperature 77.0 - 1290 °F	
	15.8 µm/m-°C @Temperature 25.0 - 800 °C	8.78 µin/in-°F @Temperature 77.0 - 1470 °F	
	16.5 µm/m-°C @Temperature 25.0 - 900 °C	9.17 µin/in-°F @Temperature 77.0 - 1650 °F	
	17.0 µm/m-°C @Temperature 25.0 - 1000 °C	9.44 µin/in-°F @Temperature 77.0 - 1830 °F	
Thermal Conductivity	9.40 W/m-K	65.2 BTU-in/hr-ft²-°F	RT
	10.9 W/m-K @Temperature 100 °C	75.6 BTU-in/hr-ft²-°F @Temperature 212 °F	

Thermal Properties	Metric	English	Comments
	12.9 W/m-K	89.5 BTU-in/hr-ft²-°F	
	@Temperature 200 °C	@Temperature 392 °F	
	14.8 W/m-K	103 BTU-in/hr-ft²-°F	
	@Temperature 300 °C	@Temperature 572 °F	
	16.8 W/m-K	117 BTU-in/hr-ft²-°F	
	@Temperature 400 °C	@Temperature 752 °F	
	18.7 W/m-K	130 BTU-in/hr-ft²-°F	
	@Temperature 500 °C	@Temperature 932 °F	
	20.7 W/m-K	144 BTU-in/hr-ft²-°F	
	@Temperature 600 °C	@Temperature 1110 °F	
	22.6 W/m-K	157 BTU-in/hr-ft²-°F	
	@Temperature 700 °C	@Temperature 1290 °F	
	24.7 W/m-K	171 BTU-in/hr-ft²-°F	
	@Temperature 800 °C	@Temperature 1470 °F	
	26.7 W/m-K	185 BTU-in/hr-ft²-°F	
	@Temperature 900 °C	@Temperature 1650 °F	
	29.2 W/m-K	203 BTU-in/hr-ft²-°F	
	@Temperature 1000 °C	@Temperature 1830 °F	
Melting Point	1330 - 1410 °C	2430 - 2570 °F	
Solidus	1330 °C	2430 °F	
Liquidus	1410 °C	2570 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.10 %	0.10 %	
Chromium, Cr	20 %	20 %	
Cobalt, Co	51 %	51 %	
Iron, Fe	<= 3.0 %	<= 3.0 %	
Manganese, Mn	1.5 %	1.5 %	
Nickel, Ni	10 %	10 %	
Silicon, Si	<= 0.40 %	<= 0.40 %	

Component Elements Properties	Metric	English	Comments
Tungsten, W	15 %	15 %	

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

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com
Email : sales@lookpolymers.com
Tel : +86 021-51131842
Mobile : +86 13061808058
Skype : lookpolymers
Address : United North Road 215,Fengxian District, Shanghai City,China