

Special Metals INCOLOY® Alloy 907

Category : Metal , Superalloy , Iron Base

Material Notes:

A nickel-iron-cobalt alloy with additions of niobium and titanium for precipitation hardening. It has the low coefficient of expansion and high strength of INCOLOY alloy 903 but with improved notch-rupture properties at elevated temperatures. Used for components of gas turbines including seals, shafts, and casings. Standard product forms are round, flats, forging stock, extruded section, and wire. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCOLOY-Alloy-907.php

Physical Properties	Metric	English	Comments
Density	8.33 g/cc	0.301 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1140 MPa	165000 psi	Precipitation Hardened prior to test
	@Temperature 550 Â°C	@Temperature 1020 Â°F	
Tensile Strength, Yield	1350 MPa	196000 psi	Precipitation Hardened. Value at room temperature
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Tensile Strength, Yield	1100 MPa	160000 psi	Precipitation Hardened. Value at room temperature
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	970 MPa	141000 psi	Precipitation Hardened prior to test
	@Strain 0.200 %, Temperature 550 Â°C	@Strain 0.200 %, Temperature 1020 Â°F	
Elongation at Break	10 %	10 %	Precipitation Hardened
	10 %	10 %	
Elongation at Break	10 %	10 %	Precipitation Hardened prior to test.
	@Temperature 550 Â°C	@Temperature 1020 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	7.70 Âµm/m-Â°C	4.28 Âµin/in-Â°F	
	@Temperature 20.0 - 427 Â°C	@Temperature 68.0 - 801 Â°F	
Specific Heat Capacity	0.431 J/g-Â°C	0.103 BTU/lb-Â°F	
Thermal Conductivity	14.8 W/m-K	103 BTU-in/hr-ft ² -Â°F	

Thermal Properties	Metric	English	Comments
Solidus	1335 Â°C	2435 Â°F	
Liquidus	1400 Â°C	2550 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.030 %	0.030 %	
Cobalt, Co	13 %	13 %	
Iron, Fe	42 %	42 %	
Nickel, Ni	38 %	38 %	
Niobium, Nb (Columbium, Cb)	4.7 %	4.7 %	
Silicon, Si	0.15 %	0.15 %	
Titanium, Ti	1.5 %	1.5 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000697 ohm-cm	0.0000697 ohm-cm	
Curie Temperature	400 - 455 Â°C	752 - 851 Â°F	

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