

Special Metals INCOLOY® A-286 Iron-Nickel-Chromium Alloy

Category : Metal , Superalloy , Iron Base

Material Notes:

Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCOLOY-A-286-Iron-Nickel-Chromium-Alloy.php

Physical Properties	Metric	English	Comments
Density	7.94 g/cc	0.287 lb/in ³	

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	201 GPa	29200 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	16.4 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	9.11 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Mean
	@Temperature 27.0 - 100 $\text{Å}^\circ\text{C}$	@Temperature 80.6 - 212 $\text{Å}^\circ\text{F}$	
	16.9 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	9.39 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Mean
	@Temperature 27.0 - 300 $\text{Å}^\circ\text{C}$	@Temperature 80.6 - 572 $\text{Å}^\circ\text{F}$	
Specific Heat Capacity	17.5 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	9.72 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Mean
	@Temperature 27.0 - 500 $\text{Å}^\circ\text{C}$	@Temperature 80.6 - 932 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	17.7 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	9.83 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Mean
	@Temperature 27.0 - 700 $\text{Å}^\circ\text{C}$	@Temperature 80.6 - 1290 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	12.7 W/m-K	88.1 BTU-in/hr-ft ² - $\text{Å}^\circ\text{F}$	
Melting Point	1370 - 1430 $\text{Å}^\circ\text{C}$	2500 - 2610 $\text{Å}^\circ\text{F}$	
Solidus	1370 $\text{Å}^\circ\text{C}$	2500 $\text{Å}^\circ\text{F}$	
Liquidus	1430 $\text{Å}^\circ\text{C}$	2610 $\text{Å}^\circ\text{F}$	
Maximum Service Temperature, Air	700 $\text{Å}^\circ\text{C}$	1290 $\text{Å}^\circ\text{F}$	good strength and oxidation resistance

Component Elements Properties	Metric	English	Comments
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Aluminum, Al Component Elements Properties	Metric	English	Comments
Boron, B	0.0010 - 0.010 %	0.0010 - 0.010 %	
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	13.5 - 16 %	13.5 - 16 %	
Iron, Fe	60 %	60 %	As remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	1.0 - 1.5 %	1.0 - 1.5 %	
Nickel, Ni	24 - 27 %	24 - 27 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	
Titanium, Ti	1.9 - 2.35 %	1.9 - 2.35 %	
Tungsten, W	3.0 - 4.5 %	3.0 - 4.5 %	
Vanadium, V	0.10 - 0.50 %	0.10 - 0.50 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000910 ohm-cm	0.0000910 ohm-cm	
Magnetic Permeability	1.007	1.007	at 200 Oersted (15.9 kA/m)

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