

Special Metals INCONEL® alloy N06230 Ni-Cr-W-Mo Alloy

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

INCONEL® alloy N06230 (UNS N06230 / W.Nr. 2.4733) is a carbide strengthened nickel-chromium-tungsten-molybdenum alloy with an exceptional combination of strength, stability, and resistance to corrosion at very high temperatures. Alloy N06230 offers particularly good resistance to oxidation at temperatures greater than 1800°F (980°C). It also offers good resistance to carburization and nitridation. The alloy is nickel-based. Chromium imparts resistance to high temperature corrosion. Oxidation is further enhanced by a micro-addition of the rare earth element, lanthanum. Tungsten and molybdenum in conjunction with the alloy's high carbon content are largely responsible for the strength of the alloy. The creep resistance of alloy N06230 is optimized by control of the boron content. The combination of high temperature strength and resistance to creep, stress rupture, and corrosion make the alloy attractive for service at temperatures above 1800°F (980°C). Potential applications include equipment and components for land-based gas turbines, thermal and petrochemical processing, heat treating, and ore and metal refining. Information Provided by Special Metals Corporation

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCONEL-alloy-N06230-Ni-Cr-W-Mo-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.91 g/cc	0.322 lb/in ³	

Mechanical Properties	Metric	English	Comments
Rupture Strength	62.1 MPa	9000 psi	
	@Temperature 927 °C, Time 270000 sec	@Temperature 1700 °F, Time 75.0 hour	
Modulus of Elasticity	167 GPa	24200 ksi	
	@Temperature 800 °C	@Temperature 1470 °F	
	175 GPa	25400 ksi	
	@Temperature 700 °C	@Temperature 1290 °F	
	183 GPa	26500 ksi	
	@Temperature 600 °C	@Temperature 1110 °F	
	188 GPa	27300 ksi	
	@Temperature 500 °C	@Temperature 932 °F	
	194 GPa	28100 ksi	
	@Temperature 400 °C	@Temperature 752 °F	
	199 GPa	28900 ksi	

Mechanical Properties	Metric @ Temperature 300 Â°C	English @ Temperature 572 Â°F	Comments
	203 GPa	29400 ksi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	208 GPa	30200 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	212 GPa	30700 ksi	
	@Temperature 22.0 Â°C	@Temperature 71.6 Â°F	
Poissons Ratio	0.31	0.31	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	0.32	0.32	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	0.33	0.33	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	0.33	0.33	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	0.34	0.34	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	0.34	0.34	
	@Temperature 22.0 Â°C	@Temperature 71.6 Â°F	
	0.34	0.34	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	0.34	0.34	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	0.35	0.35	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
Shear Modulus	63.0 GPa	9140 ksi	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	67.0 GPa	9720 ksi	

Mechanical Properties	Metric	English	Comments
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	68.0 GPa	9860 ksi	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	71.0 GPa	10300 ksi	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	73.0 GPa	10600 ksi	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	74.0 GPa	10700 ksi	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	76.0 GPa	11000 ksi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	78.0 GPa	11300 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	79.0 GPa	11500 ksi	
	@Temperature 22.0 Â°C	@Temperature 71.6 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	3.84 Âµm/m-Â°C	2.13 Âµin/in-Â°F	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	3.88 Âµm/m-Â°C	2.16 Âµin/in-Â°F	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	3.99 Âµm/m-Â°C	2.22 Âµin/in-Â°F	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	4.11 Âµm/m-Â°C	2.28 Âµin/in-Â°F	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	4.18 Âµm/m-Â°C	2.32 Âµin/in-Â°F	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	4.23 Âµm/m-Â°C	2.35 Âµin/in-Â°F	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	

Thermal Properties	Metric	English	Comments
	4.28 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	2.38 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 700 $\text{Å}^\circ\text{C}$	@Temperature 1290 $\text{Å}^\circ\text{F}$	
	4.47 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	2.48 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 800 $\text{Å}^\circ\text{C}$	@Temperature 1470 $\text{Å}^\circ\text{F}$	
	4.62 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	2.57 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 900 $\text{Å}^\circ\text{C}$	@Temperature 1650 $\text{Å}^\circ\text{F}$	
Melting Point	1360 - 1410 $\text{Å}^\circ\text{C}$	2480 - 2570 $\text{Å}^\circ\text{F}$	
Solidus	1360 $\text{Å}^\circ\text{C}$	2480 $\text{Å}^\circ\text{F}$	
Liquidus	1410 $\text{Å}^\circ\text{C}$	2570 $\text{Å}^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.20 - 0.50 %	0.20 - 0.50 %	
Boron, B	<= 0.015 %	<= 0.015 %	
Carbon, C	0.050 - 0.15 %	0.050 - 0.15 %	
Chromium, Cr	20 - 24 %	20 - 24 %	
Cobalt, Co	<= 5.0 %	<= 5.0 %	
Iron, Fe	<= 3.0 %	<= 3.0 %	
Lanthanum, La	0.0050 - 0.050 %	0.0050 - 0.050 %	
Manganese, Mn	0.30 - 1.0 %	0.30 - 1.0 %	
Molybdenum, Mo	1.0 - 3.0 %	1.0 - 3.0 %	
Nickel, Ni	47.49 - 65.195 %	47.49 - 65.195 %	Balance
Phosphorous, P	<= 0.030 %	<= 0.030 %	
Silicon, Si	0.25 - 0.75 %	0.25 - 0.75 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Tungsten, W	13 - 15 %	13 - 15 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00012625 ohm-cm	0.00012625 ohm-cm	
	@Temperature 22.0	@Temperature 71.6 $\text{Å}^\circ\text{F}$	

Electrical Properties	°C Metric	English	Comments
	0.00012643 ohm-cm @Temperature 100 °C	0.00012643 ohm-cm @Temperature 212 °F	
	0.00012775 ohm-cm @Temperature 200 °C	0.00012775 ohm-cm @Temperature 392 °F	
	0.00012849 ohm-cm @Temperature 300 °C	0.00012849 ohm-cm @Temperature 572 °F	
	0.00012994 ohm-cm @Temperature 900 °C	0.00012994 ohm-cm @Temperature 1650 °F	
	0.00012994 ohm-cm @Temperature 1000 °C	0.00012994 ohm-cm @Temperature 1830 °F	
	0.00013085 ohm-cm @Temperature 800 °C	0.00013085 ohm-cm @Temperature 1470 °F	
	0.0001314 ohm-cm @Temperature 400 °C	0.0001314 ohm-cm @Temperature 752 °F	
	0.00013217 ohm-cm @Temperature 700 °C	0.00013217 ohm-cm @Temperature 1290 °F	
	0.00013274 ohm-cm @Temperature 500 °C	0.00013274 ohm-cm @Temperature 932 °F	
	0.00013343 ohm-cm @Temperature 600 °C	0.00013343 ohm-cm @Temperature 1110 °F	
Magnetic Permeability	1.002 @Temperature 21.0 °C	1.002 @Temperature 69.8 °F	200 oersteds

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