Special Metals INCOLOYÂ® alloy 864

Category : Metal , Nonferrous Metal , Nickel Alloy

Material Notes:

INCOLOYÂ® alloy 8684 (UNS S35135) was specifically developed for automotive exhaust system flexible couplings, EGR tubes, manifolds and tailpipes. It exhibits excellent fatigue resistance, thermal stability and resistance to hot salt corrosion, pitting and chloride stress-corrosion cracking. INCOLOY alloy 864 is covered by US Patent 5,827,377.Information Provided by Special Metals Corporation

Order this product through the following link:
http://www.lookpolymers.com/polymer_Special-Metals-INCOLOY-alloy-864.php

Physical Properties	Metric	English	Comments
Density	8.02 g/cc	0.290 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	82 @Temperature 20.0 Â°C	82 @Temperature 68.0 Â°F	Autogenously Welded plate, 1.6mm thick
Tensile Strength at Break	161.3 MPa @Temperature 871 Â°C	23390 psi @Temperature 1600 Â°F	Autogenously Welded plate, 1.6mm thick
	282 MPa @Temperature 759 Â°C	40900 psi @Temperature 1400 Â°F	Autogenously Welded plate, 1.6mm thick
	402.7 MPa @Temperature 538 Â°C	58410 psi @Temperature 1000 Â°F	Autogenously Welded plate, 1.6mm thick
	406.1 MPa @Temperature 648 Â°C	58900 psi @Temperature 1200 Â°F	Autogenously Welded plate, 1.6mm thick
	444.7 MPa @Temperature 427 Â°C	64500 psi @Temperature 801 Â°F	Autogenously Welded plate, 1.6mm thick
	554.4 MPa @Temperature 20.0 Â°C	80410 psi @Temperature 68.0 Â°F	Autogenously Welded plate, 1.6mm thick
Tensile Strength, Ultimate	648 MPa	94000 psi	Annealed Sheet, 0.15-1.6mm thick
Tensile Strength, Yield	109.6 MPa @Temperature 871 Â°C	15900 psi @Temperature 1600 Â°F	Autogenously Welded plate, 1.6mm thick

Mechanical Properties	Metric	English	Comments
	182 MPa @Temperature 759 Â°C	26400 psi @Temperature 1400 Â°F	Autogenously Welded plate, 1.6mm thick
	199.3 MPa @Temperature 648 Â°C	28910 psi @Temperature 1200 Â°F	Autogenously Welded plate, 1.6mm thick
	213.1 MPa @Temperature 538 Â°C	30910 psi @Temperature 1000 Â°F	Autogenously Welded plate, 1.6mm thick
	218.6 MPa @Temperature 427 Â°C	31710 psi @Temperature 801 Â°F	Autogenously Welded plate, 1.6mm thick
	312.3 MPa @Temperature 20.0 Â°C	45300 psi @Temperature 68.0 Â°F	Autogenously Welded plate, 1.6mm thick
	276 MPa @Strain 0.200 %	40000 psi @Strain 0.200 %	Annealed Sheet, 0.15-1.6mm thick
Elongation at Break	16.6 % @Temperature 538 Â°C	16.6 % @Temperature 1000 Â°F	Autogenously Welded plate, 1.6mm thick
	18.4 % @Temperature 648 Â°C	18.4 % @Temperature 1200 Â°F	Autogenously Welded plate, 1.6mm thick
	18.7 % @Temperature 20.0 Â°C	18.7 % @Temperature 68.0 Â°F	Autogenously Welded plate, 1.6mm thick
	20.5 % @Temperature 427 Â°C	20.5 % @Temperature 801 Â°F	Autogenously Welded plate, 1.6mm thick
	23.5 % @Temperature 759 Â°C	23.5 % @Temperature 1400 Â°F	Autogenously Welded plate, 1.6mm thick
	55 % @Temperature 871 Â°C	55 % @Temperature 1600 Â°F	Autogenously Welded plate, 1.6mm thick
	44 % @Thickness 0.150 - 1.60 mm	44 % @Thickness 0.00591 - 0.0630 in	Annealed Sheet

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	134 GPa	19400 ksi	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	145 GPa	21000 ksi	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	158 GPa	22900 ksi	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	175 GPa	25400 ksi	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	190 GPa	27600 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	195 GPa	28300 ksi	
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	14.7 Âµm/m-Â°C	8.17 Âµin/in-Â°F	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	15.1 Âµm/m-Â°C	8.39 Âµin/in-Â°F	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	15.5 Âµm/m-Â°C	8.61 Âµin/in-Â°F	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	15.9 Âµm/m-Â°C	8.83 Âµin/in-Â°F	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	16.1 Âµm/m-Â°C	8.94 Âµin/in-Â°F	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	16.4 Âµm/m-Â°C	9.11 Âµin/in-Â°F	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	16.8 Âµm/m-Â°C	9.33 Âµin/in-Â°F	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	11.0 W/m-K	76.3 BTU-in/hr-ftÂ²-Â°F	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
	13.0 W/m-K @Temperature 100 Â°C	90.2 BTU-in/hr-ftÂ²-Â°F @Temperature 212 Â°F	
	16.0 W/m-K @Temperature 300 Â°C	111 BTU-in/hr-ftÂ²-Â°F @Temperature 572 Â°F	
	19.0 W/m-K @Temperature 500 Â°C	132 BTU-in/hr-ftÂ²-Â°F @Temperature 932 Â°F	
	23.0 W/m-K @Temperature 700 Â°C	160 BTU-in/hr-ftÂ²-Â°F @Temperature 1290 Â°F	
	25.0 W/m-K @Temperature 900 Â°C	174 BTU-in/hr-ftÂ²-Â°F @Temperature 1650 Â°F	
	29.0 W/m-K @Temperature 1100 Â°C	201 BTU-in/hr-ftÂ²-Â°F @Temperature 2010 Â°F	
Melting Point	1353 - 1393 Â°C	2467 - 2539 Â°F	
Solidus	1353 Â°C	2467 Â°F	
Liquidus	1393 Â°C	2539 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	20 - 25 %	20 - 25 %	
Iron, Fe	29.105 - 45 %	29.105 - 45 %	Balance
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	4.0 - 4.8 %	4.0 - 4.8 %	
Nickel, Ni	30 - 38 %	30 - 38 %	
Silicon, Si	0.60 - 1.0 %	0.60 - 1.0 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Titanium, Ti	0.40 - 1.0 %	0.40 - 1.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000104 ohm-cm @Temperature 21.0 Â°C	0.000104 ohm-cm @Temperature 69.8 Â°F	
Magnetic Permeability	1.004	1.004	at 200 oersted (15.9 kA/m)

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