Special Metals INCOLOYÂ® alloy 832 Stainless Steel

Category : Metal , Ferrous Metal , Stainless Steel

Material Notes:

INCOLOYÂ® alloy 832 is a low cost stainless steel developed specifically for domestic and industrial sheathed heater applications. With specific chemistry additions to ensure satisfactory formulation of a protective and aesthetically pleasing surface oxide film, it can replace, for example, Type 309 stainless steel, or the more expensive, higher nickel products such as INCOLOY alloys 800 or 840 (if cost is the only consideration).The alloy exhibits excellent thermal stability and good resistance to hot salt corrosion, and to pitting. It is readily formed and has excellent weldability, making it suitable for use on high output continuous strip welding machines.Information Provided by Special Metals Corporation

Order this product through the following link:
http://www.lookpolymers.com/polymer_Special-Metals-INCOLOY-alloy-832-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.75 g/cc	0.280 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	82.3 @Temperature 23.0 Â°C	82.3 @Temperature 73.4 Â°F	
Tensile Strength, Ultimate	762 MPa @Temperature 23.0 Â°C	111000 psi @Temperature 73.4 Â°F	
Tensile Strength, Yield	364 MPa @Strain 0.200 %, Temperature 20.0 Â°C	52800 psi @Strain 0.200 %, Temperature 68.0 Â°F	strip with ASTM grain size of 10.5-11.0
	364 MPa @Strain 0.200 %, Thickness 0.500 mm	52800 psi @Strain 0.200 %, Thickness 0.0197 in	strip with ASTM grain size of 10.5-11.0
Elongation at Break	37.5 % @Thickness 0.500 mm, Temperature 20.0 Â°C	37.5 % @Thickness 0.0197 in, Temperature 68.0 Â°F	strip with ASTM grain size of 10.5-11.0

Thermal Properties	Metric	English	Comments
CTE, linear	16.61 Âµm/m-Â°C @Temperature 100 Â°C	9.228 Âµin/in-Â°F @Temperature 212 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228
	16.78 Âµm/m-Â°C @Temperature 200 Â°C	9.322 Âµin/in-Â°F @Temperature 392 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228

Thermal Properties	Metric	English	Comments
	Âµm/m-Â°C @Temperature 300 Â°C	Âµin/in-Â°F @Temperature 572 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228
	17.26 Âµm/m-Â°C @Temperature 400 Â°C	9.589 Âµin/in-Â°F @Temperature 752 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228
	17.45 Âµm/m-Â°C @Temperature 500 Â°C	9.694 Âµin/in-Â°F @Temperature 932 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228
	17.48 Âµm/m-Â°C @Temperature 700 Â°C	9.711 Âµin/in-Â°F @Temperature 1290 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228
	17.69 Âµm/m-Â°C @Temperature 600 Â°C	9.828 Âµin/in-Â°F @Temperature 1110 Â°F	0.100-in Cold-Rolled Plate; ASTM E 228
Specific Heat Capacity	0.472 J/g-Â°C @Temperature 23.0 Â°C	0.113 BTU/lb-Â°F @Temperature 73.4 Â°F	
	0.497 J/g-Â°C @Temperature 100 Â°C	0.119 BTU/lb-Â°F @Temperature 212 Â°F	
	0.540 J/g-Â°C @Temperature 300 Â°C	0.129 BTU/lb-Â°F @Temperature 572 Â°F	
	0.572 J/g-Â°C @Temperature 500 Â°C	0.137 BTU/lb-Â°F @Temperature 932 Â°F	
	0.597 J/g-Â°C @Temperature 700 Â°C	0.143 BTU/lb-Â°F @Temperature 1290 Â°F	
	0.618 J/g-Â°C @Temperature 900 Â°C	0.148 BTU/lb-Â°F @Temperature 1650 Â°F	
	0.626 J/g-Â°C @Temperature 1000 Â°C	0.150 BTU/lb-Â°F @Temperature 1830 Â°F	
	0.638 J/g-Â°C @Temperature 1150 Â°C	0.152 BTU/lb-Â°F @Temperature 2100 Â°F	
Thermal Conductivity	14.189 W/m-K @Temperature 23.0	98.472 BTU-in/hr-ftÂ²-Â°F	

Thermal Properties	Metric	English	Comments
	Â°C	@Temperature 73.4 Â°F	
	15.561 W/m-K @Temperature 100 Â°C	107.99 BTU-in/hr-ftÂ²-Â°F @Temperature 212 Â°F	
	18.552 W/m-K @Temperature 300 Â°C	128.75 BTU-in/hr-ftÂ²-Â°F @Temperature 572 Â°F	
	21.393 W/m-K @Temperature 500 Â°C	148.47 BTU-in/hr-ftÂ²-Â°F @Temperature 932 Â°F	
	24.193 W/m-K @Temperature 700 Â°C	167.90 BTU-in/hr-ftÂ²-Â°F @Temperature 1290 Â°F	
	26.926 W/m-K @Temperature 900 Â°C	186.87 BTU-in/hr-ftÂ²-Â°F @Temperature 1650 Â°F	
	28.252 W/m-K @Temperature 1000 Â°C	196.07 BTU-in/hr-ftÂ²-Â°F @Temperature 1830 Â°F	
	30.238 W/m-K @Temperature 1150 Â°C	209.85 BTU-in/hr-ftÂ²-Â°F @Temperature 2100 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.15 %	0.15 %	
Carbon, C	<= 0.050 %	<= 0.050 %	
Chromium, Cr	19.5 - 21 %	19.5 - 21 %	
Copper, Cu	<= 0.75 %	<= 0.75 %	
Iron, Fe	60.645 - 70.7 %	60.645 - 70.7 %	Balance
Manganese, Mn	0.40 %	0.40 %	
Molybdenum, Mo	0.40 %	0.40 %	
Nickel, Ni	8.75 - 15.5 %	8.75 - 15.5 %	
Silicon, Si	0.70 %	0.70 %	

Component Elements Properties	Metric	English	Comments
Sulfur, S	<= 0.0050 %	<= 0.0050 %	
Titanium, Ti	0.40 %	0.40 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000080280 ohm-cm @Temperature 22.0 Â°C	0.000080280 ohm-cm @Temperature 71.6 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.000084609 ohm-cm @Temperature 93.0 Â°C	0.000084609 ohm-cm @Temperature 199 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.000090800 ohm-cm @Temperature 204 Â°C	0.000090800 ohm-cm @Temperature 399 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.000096000 ohm-cm @Temperature 315 Â°C	0.000096000 ohm-cm @Temperature 599 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.0001010 ohm-cm @Temperature 427 Â°C	0.0001010 ohm-cm @Temperature 801 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.00010601 ohm-cm @Temperature 538 Â°C	0.00010601 ohm-cm @Temperature 1000 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.00011060 ohm-cm @Temperature 649 Â°C	0.00011060 ohm-cm @Temperature 1200 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63
	0.00011493 ohm-cm @Temperature 760 Â°C	0.00011493 ohm-cm @Temperature 1400 Â°F	0.100-in Cold-Rolled Plate; ASTM B-63

Descriptive Properties	Value	Comments
Thermal Diffusivity (cm2/s)	0.0385	at 23Â°C
	0.0401	at 100Â°C
	0.044	at 300Â°C
	0.0479	at 500Â°C
	0.0519	at 700Â°C
	0.0558	at 900Â°C

Descriptive Properties	Value	Comments
	0.0578	at 1000Â°C
	0.0607	at 1150Â°C

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