Special Metals BRIGHTRAYÂ® Alloy S Electrical Resistance Alloy

Category : Metal , Electronic/Magnetic Alloy , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A nickel-chromium electrical-resistance alloy for use at temperatures up to 2100Â°F (1150Â°C) under continuous operating conditions. It is similar to BRIGHTRAY alloy C but does not contain rare-earth additions. It has good resistance to oxidizing, neutral, and reducing atmospheres. The alloy has a low temperature coefficient of resistance. Used for heating elements in industrial furnaces. The standard product forms are strip and wire.Data provided by the manufacturer, Special Metals.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Special-Metals-BRIGHTRAY-Alloy-S-Electrical-Resistance-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.43 g/cc	0.305 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	735 MPa	107000 psi	Annealed

Thermal Properties	Metric	English	Comments
CTE, linear	12.5 Âµm/m-Â°C @Temperature 20.0 - 500 Â°C	6.94 Âµin/in-Â°F @Temperature 68.0 - 932 Â°F	
Specific Heat Capacity	0.419 J/g-Â°C	0.100 BTU/lb-Â°F	
Melting Point	1400 - 1420 Â°C	2550 - 2590 Â°F	
Solidus	1400 Â°C	2550 Â°F	
Liquidus	1420 Â°C	2590 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	19 - 21 %	19 - 21 %	
Iron, Fe	<= 1.0 %	<= 1.0 %	
Manganese, Mn	<= 2.5 %	<= 2.5 %	
Nickel, Ni	75 %	75 %	Including Cobalt, calculated as remainder
Silicon, Si	0.75 - 1.75 %	0.75 - 1.75 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000110 ohm-cm	0.000110 ohm-cm	Temperature coefficient of resistance is 60 ÂµOhm/Ohm-Â°C in the range 25-500Â°C.

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