

Special Metals INCOLOY® Alloy MA 956

Category : Metal , Superalloy , Iron Base

Material Notes:

An iron-chromium-aluminum alloy that is oxide dispersion strengthened and produced by mechanical alloying. Production involves high-energy milling of metal powders to create an alloy with a strengthening yttrium oxide dispersoid that remains stable to the alloy's melting point. The alloy has exceptional strength and resistance to oxidation, carburization, and hot corrosion at temperatures to over 2000°F (1100°C). Used for gas-turbine combustion chambers, advanced energy-conversion systems, and other applications involving rigorous conditions. Standard product forms are round, flats, extruded section, tube, plate, sheet, and wire. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-INCOLOY-Alloy-MA-956.php

Physical Properties	Metric	English	Comments
Density	7.25 g/cc	0.262 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	650 MPa	94300 psi	Annealed
	590 MPa @Temperature 300 °C	85600 psi @Temperature 572 °F	Annealed prior to test
Tensile Strength, Yield	550 MPa	79800 psi	Annealed
	480 MPa @Temperature 300 °C	69600 psi @Temperature 572 °F	Annealed prior to test
Elongation at Break	9.0 %	9.0 %	Annealed prior to test.
	9.0 % @Temperature 300 °C	9.0 % @Temperature 572 °F	Annealed prior to test.

Thermal Properties	Metric	English	Comments
CTE, linear	11.3 µm/m-°C	6.28 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
Specific Heat Capacity	0.469 J/g-°C	0.112 BTU/lb-°F	
Thermal Conductivity	10.9 W/m-K	75.6 BTU-in/hr-ft ² -°F	
Melting Point	1311 - 1400 °C	2392 - 2550 °F	

Solidus Thermal Properties	1311 Å°C Metric	2392 Å°F English	Comments
Liquidus	1400 Å°C	2550 Å°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	4.5 %	4.5 %	
Chromium, Cr	20 %	20 %	
Iron, Fe	74 %	74 %	
Titanium, Ti	0.50 %	0.50 %	
Y2O3	0.50 %	0.50 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000131 ohm-cm	0.000131 ohm-cm	

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