



ASM Aerospace Specification Metals Inc.



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## Special Metals INCO® A-286 Iron-Nickel-Chromium Alloy

**Subcategory:** Iron Base; Metal; Superalloy

Component	Wt. %	Component	Wt. %	Component	Wt. %
Al	Max 0.35	Fe	60	S	Max 0.03
B	0.001 - 0.01	Mn	Max 2	Ti	1.9 - 2.35
C	Max 0.08	Mo	1 - 1.5	V	0.1 - 0.5
Cr	13.5 - 16	Ni	24 - 27	W	3 - 4.5

### Material Notes:

Iron content calculated as remainder.

Data provided by the manufacturer, Special Metals.

Physical Properties	Metric	English	Comments
Density	<u>7.94 g/cc</u>	0.287 lb/in <sup>3</sup>	
<b>Mechanical Properties</b>			
Modulus of Elasticity	<u>201 GPa</u>	29200 ksi	
<b>Electrical Properties</b>			
Electrical Resistivity	<u>9.1e-005 ohm-cm</u>	9.1e-005 ohm-cm	
Magnetic Permeability	1.007	1.007	at 200 Oersted (15.9 kA/m)
<b>Thermal Properties</b>			
CTE, linear 20°C	<u>16.4 μm/m-°C</u>	9.11 μin/in-°F	Mean 27-100°C
CTE, linear 250°C	<u>16.9 μm/m-°C</u>	9.39 μin/in-°F	Mean 27-300°C

CTE, linear 500°C	<a href="#"><u>17.5 μm/m-°C</u></a>	9.72 μin/in-°F	Mean 27-500°C
CTE, linear 1000°C	<a href="#"><u>17.7 μm/m-°C</u></a>	9.83 μin/in-°F	Mean 27-700°C
Specific Heat Capacity	<a href="#"><u>0.419 J/g-°C</u></a>	0.1 BTU/lb-°F	
Thermal Conductivity	<a href="#"><u>12.7 W/m-K</u></a>	88.1 BTU-in/hr-ft <sup>2</sup> -°F	
Melting Point	1370 - 1430 °C	2500 - 2610 °F	
Solidus	<a href="#"><u>1370 °C</u></a>	2500 °F	
Liquidus	<a href="#"><u>1430 °C</u></a>	2610 °F	
Maximum Service Temperature, Air	<a href="#"><u>700 °C</u></a>	1290 °F	good strength and oxidation resistance

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.