

## Incoloy® Alloy 800

**UNS N08800**  
**W.Nr 1.4876**

Incoloy® Alloy 800 is used for its corrosion resistance, heat resistance, strength, and stability at high temperatures. It offers general corrosion resistance to many aqueous media and resists stress corrosion cracking. At elevated temperatures it resists oxidation, carburization, and sulfidation along with maintaining good rupture and creep strength. Applications include furnace components and equipment, petrochemical furnace cracker tubes, pigtailed headers, sheathes for electrical heating elements, steam generator tubing, and domestic appliances. Industries supplied include: Chemical, thermal, and food processing, and nuclear.

### Nominal Composition

	C	Mn	Si	P	S	Cr	Ni	Ti	Al	Cu	Fe		
min	-	-	-	-	-	19.00	30.00	0.15	0.15	-	-		
max	0.10	1.50	1.00	0.035	0.015	23.00	35.00	0.60	0.60	0.75	Bal		

### Physical Properties

	At 70°F	At 20°C
<b>Density</b>	0.287 lb/in <sup>3</sup>	7.94 g/cm <sup>3</sup>
<b>Modulus of Elasticity (E)</b>	28.50 x 10 <sup>3</sup> ksi	197 GPa
<b>Modulus of Rigidity (G)</b>	11 x 10 <sup>3</sup> ksi	76 GPa
<b>Coefficient of Expansion</b>	9.4 microinches/in.-°F (70-1000°F)	16.8 µm/m-°C (20-538°C)
<b>Electrical Resistivity</b>	38.9 µ ohm.in	98.9 µ ohm.cm
<b>Thermal Conductivity</b>	80 Btu-in./ft. <sup>2</sup> hr.-°F	11.5 W/m-K

### Applicable Specifications

Strip	AMS 5871, ASTM A240, ASTM B409
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### Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1900°F (1036°C)	75 ksi (520 MPa) min	-300°F to 1500°F (-184°C to 816°C)

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