

**Alloy 800**    **High performance alloy**

**Trade name**  
**Incoloy 800**  
**Nickelvac 800**  
**Ferrochronin 800**  
**Nicrofer 3220**

**UNS**  
**N08800**

**DIN**  
**W1.4876**

**EN**  
**X10CrNiAlTi32-21**

**Chemical Composition %**

Cr	Ni	Fe	Cu	C	Mn	Si	S	Ti	Al	P
19-23	30-35	39.5 min	0.75max	0.15max	1.5max	1max	0.015max	0.15-0.6	0.15-0.6	0.035 max

**Recommended Welding Consumables**

Wire        ER NiCr-3

Rod         E NiCr-3

Form	Smls Pipe/Tub	Weded Pipe	Welded Tube	Fittings	Plate	Bar	Forgings
Standard	ASTM B622	ASTM B 619	ASTM B 626	ASTM B 366	ASTM B333	ASTM B335	ASTM B564

**Properties**

High creep-rupture strength.

Good resistance to oxidation and carburization at elevated temperatures

**Applications**

Radiant tubes, furnace parts

Manifolds

**Physical Properties**

Density: 0.27 lbs/in<sup>3</sup>, 7.94.g/cm<sup>3</sup>

Specific Heat, Btu/lb•° F, J/kg•°C:

32 - 212 °F (0 - 100 °C): 0.11 (460)

Mean Coefficient of Thermal Expansion: in/inl° F (mm/ml°C)

70 - 212 ° F (20 - 100 °C)- 7.9 x 10-s (14.2)

Thermal Conductivity: BTU/h-ft-° F (W/m-° K):

70 ° F (21 °C): 6.7 (11.6)

Modulus of Elasticity: ksi (MPa)

28.5 x 103 (196.5 x 103) in tension

Permeability at 70 ° F (21 °C) H = 200 Oersted :

Melting Point: 2525 ° F (1385 °C)

Ultimate Tensile Strength: 75 KSI min (420 MPa min)

Yield Strength (0.2% offset): 30 KSI (gauges ≥ 0.020 inches)

Elongation: 30% min

Hardness: Rb 84 nom

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