

## Alloy 20 Stainless Steel

UNS N08020  
W. Nr 2.4660

### Applicable Specifications

Wire & Bar    ASTM B473

**Description:** Alloy 20 is a nickel-iron-chromium alloy with excellent corrosion resistance in acidic environments including phosphoric, sulfuric, and nitric acids. Alloying additions also provide resistance to stress corrosion cracking in chloride rich environments. Alloy 20 can be fabricated and welded through most conventional processes while maintaining resistance to pitting and crevice corrosion.

**Applications include:** Extraction columns, Heat exchangers, Mixing tanks, Pipes, Pumps, Valves, Food processing equipment, Springs

**Industries supplied include:** Chemical Processing, Food Processing, Oil & Gas

### Nominal Composition

	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Cb + Ta	Fe
min	-	-	-	-	-	32.00	1900	2.00	3.00	8*C-1.0	Bal
max	0.07	2.00	0.045	0.035	1.00	38.00	21.00	3.00	4.00	-	-

### Physical Properties

	At 70°F	At 20°C
Density	0.292 lb/in <sup>3</sup>	8.08 g/cm <sup>3</sup>
Modulus of Elasticity (E)	28.0 x 10 <sup>3</sup> ksi	193 GPa
Modulus of Rigidity (G)	11.0 x 10 <sup>3</sup> ksi	76 GPa
Coefficient of Expansion	8.2 µin/in-°F (70-212°F)	14.7 µm/m-°C (25-100°C)
Electrical Resistivity	53.5 µohm-in	135.9 µohm-cm
Thermal Conductivity	85 Btu-in/ft <sup>2</sup> -hr-°F	12.3 W/m-°C

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1800-2050°F (982-1121°C)	90-110 ksi (620-758 MPa)	Up to 930°F (500°C)
Spring Temper	Stress Relieve 500F (260°C)	150 ksi min (1034 MPa)	Up to 500°F (260°C)

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