

## NITRONIC® 32 Alloy (XM-28)

UNS S24100

### Applicable Specifications

Wire & Bar | ASTM A313, A580, A276

**Description:** NITRONIC 32® (XM-28) is a low nickel austenitic stainless steel often selected as an alternative to 304 stainless steel when higher strength and comparable corrosion resistance is necessary. The alloy's high work hardening rate allows for increased strength while maintaining ductility. NITRONIC 32® can be readily hot worked or cold worked, with annealing recommended after severe cold forming.

**Applications include:** Wire forms, racks/cages, screens, springs, concrete reinforcement, pole line hardware

**Industries supplied include:** Chemical Processing, Food Processing, Electric Power Distribution, Construction

### Nominal Composition

	C	Mn	P	S	Si	Cr	Ni	N	Fe
min	-	11.00	-	-	-	16.50	0.50	0.20	Bal
max	0.15	14.00	0.060	0.030	0.030	19.00	2.50	0.45	-

### Physical Properties

	At 70°F	At 20°C
<b>Density</b>	0.280 lb/in <sup>3</sup>	7.78 g/cm <sup>3</sup>
<b>Modulus of Elasticity (E)</b>	29.0 x 10 <sup>3</sup> ksi	200 GPa
<b>Coefficient of Expansion</b>	10.3 μin/in-°F (70-1000°F)	18.56 μm/m-°C (25-538°C)
<b>Electrical Resistivity</b>	27.6 μohm-in	70.1 μohm-cm
<b>Thermal Conductivity</b>	83 Btu-in/ft <sup>2</sup> -hr-°F	12.0 W/m-°C

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1900-2050°F (1038-1121°C)	120-140 ksi (827-965 MPa)	Up to 1100°F (593°C)
Spring Temper	Stress Relieve 750-950°F (400-510°C)	≤.020" dia. 300-355 ksi (2070-2450 MPa) >.020" ≤.120" dia. 255-325 ksi (1760-2240 MPa) >.120" ≤.278" dia. 215-280 ksi (1480-1930 MPa) >.278" dia. 160-230 ksi (1105-1585 MPa)	Up to 500°F (260°C)

NITRONIC® is a registered trademark of AK Steel.

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