

Nitronic® 50 (XM-19) Stainless Steel

NITRONIC 50 STAINLESS STEEL DATASHEET

Nitronic® 50 (XM-19) is a highly alloyed austenitic stainless steel offers a combination of good mechanical strength (approaching twice that of Type 316 stainless steel) and high corrosion resistance. The mechanical properties at both elevated and sub-zero temperatures are very good and, unlike many austenitic stainless steels, the alloy does not become magnetic when cold worked or cooled to sub-zero temperatures. In the cold-worked condition the material possesses a yield strength up to over three times that of Type 316 stainless steel.

Typical applications for Nitronic® 50 includes medical implants, shafts, stems and pins in valves, chokes and pumps in oil & gas industry, mechanical components in nuclear installations, boat shafting, bolting and rigging.

Product forms include bar, seamless tubing, and plate.

Standards

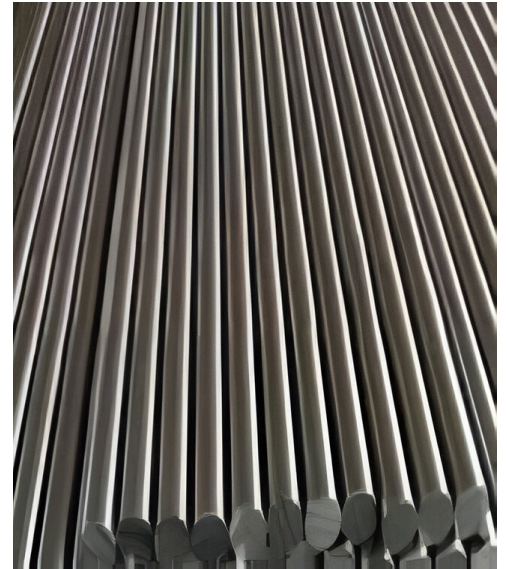
- UNS S20910
- Grade XM-19
- ASTM A276/A479

Physical Properties

- Density: 0.285 LB/in³ (7.88 g/cm³)
- Melting Range: 2579-2642 °F (1415-1450°C)
- Modulus of Elasticity: 26.2x10⁶psi
- Magnetic Permeability: 1.004 Max

Characteristics

- High strength
- High corrosion resistance
- Low magnetic permeability



Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	N	Mo	V	Nb
MIN	-	4.00	-	-	-	20.50	11.50	0.20	1.50	0.10	0.10
MAX	0.06	6.00	0.30	0.04	1.00	23.50	13.50	0.40	3.00	0.30	0.30

Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) %	Hardness HRC (BHN)
100 (690)	55 (380)	35	55	35 (322)

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SPECIALTY STEEL SUPPLY
19201 CIRCLE LAKE DR
PINEHURST, TX 77362
Call for a quote (281) 821-7111



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