

Nitronic 50HS (XM-19) Stainless is a high strength and good corrosion resistant austenitic stainless steel. It has more than double the yield strength of 304 and 316 stainless steel and has better corrosion resistance than 317L stainless steel. Nitronic 50HS (XM-19) Stainless remains non-magnetic even after being severely cold worked. It maintains strength at high temperatures as well as sub-zero temperatures. The cold worked (HS) version meets the mechanical properties of ASTM A276 Conditions S.

Specifications

UNS: S20910 W. Nr./EN: 1.3964 ASTM: A 262, A 276 Condition S, A 370, A 479, A 484 AMS: 5764 (chemistry only)
 ISO: 15156-3 NACE: MR0175 API: API 6A

Chemical Composition, %

	Ni	Cr	Mo	Mn	Si	C	N	S	P	Cb	V	Fe
MIN	11.5	20.5	1.5	4.0	—	—	0.2	—	—	0.1	0.1	—
MAX	13.5	23.5	3.0	6.0	1.0	0.06	0.4	0.03	0.045	0.3	0.3	balance

Features

- High strength austenitic alloy
- Good corrosion resistance

Applications

- Seawater pump shafts
- Heat exchangers
- Pressure vessels
- Marine hardware

Physical Properties

Density: 0.285 lb/in³ Melting Range: 2579 - 2642°F Electrical Resistivity: 492 ohm circ-mil/ft

Temperature, °F	70	200	300	400	600	800	900	1000	1200	1400
Coefficient of Thermal Expansion* in/in°F x 10 ⁻⁶	—	9.0	—	9.2	9.6	9.9	—	10.2	10.5	10.8
Thermal Conductivity Btu • ft/ft ² • hr • °F	108	—	108	—	124	—	141	—	160	—
Modulus of Elasticity Dynamic, psi x 10 ⁶	—	26.2	—	—	—	—	—	—	—	—

* 70°F to indicated temperature.

Mechanical Properties

Minimum Specified Properties, ASTM A 276 Condition S Bar

Ultimate Tensile Strength, ksi	135
0.2% Yield Strength, ksi	105
Elongation, %	20
Reduction of Area, %	50
Impact Toughness, ft-lb (-50°F)	30 Min. Average, 20 Min. Single



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