

Nitronic® 40 Stainless Steel Bar

Smiths Advanced Metals

Rev: SAM/datasheets/stainless/nitronic-40/aug-2023

Page: 1 of 1

Outstanding Performance at High & Low Temperatures

Nitronic® 40 is an austenitic manganese stainless steel alloy with additional nitrogen for extra strength.

The alloy benefits from similar corrosion resistance to Type 304 stainless steel in oxidising environments and offers significant corrosion resistance at elevated temperatures under atmospheric conditions.

Temperature Performance

Nitronic® 40 retains its mechanical properties at elevated and sub-zero temperatures. The material also offers good toughness under these conditions. The product provides low magnetic permeability and is non-magnetic, even at cryogenic temperatures. The alloy exhibits excellent intergranular corrosion resistance.

The material is susceptible to stress corrosion cracking (SCC) in hot chloride atmospheres but offers high resistance to stress corrosion cracking in marine environments.

Benefits

- High yield strength
- Excellent elevated and cryogenic performance
- Excellent intergranular corrosion resistance



Key Applications

- Aircraft components
- Boilers & pressure vessels
- Chemical processing equipment

*Chemical Composition (weight %)

	C	Si	Mn	Cr	P	Ni	S	N
min.			8.00	19.00		5.50		0.20
max.	0.04	1.00	10.00	21.50	0.04	7.50	0.01	0.40

* As per UNS S21900

*Mechanical Properties

Tensile Strength	710 MPa min
Yield Strength	370 MPa
Elongation 50mm	55%

* Properties as per UNS S21900

Machining and Welding

Nitronic 40® is weldable using resistance welding and shielded fusion techniques.

The material may be machined, but carbide-coated tooling is recommended, while processes should be undertaken at slower speed rates for best results.

www.smithsadvanced.com

info@smithsadvanced.com



Stratton Business Park,
London Road, Biggleswade,
Bedfordshire SG18 8QB

Tel: +44 (0) 1767 604710

