

# Nitronic® 60 Superalloy

Smiths High Performance



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## Wear Resistant Alloy

**Nitronic® 60 (UNS S21800) is a wear & galling resistant material.**

Nitronic® 60 is a highly alloyed austenitic stainless steel offering a combination of good mechanical strength (more than double that of 316) and superior corrosion resistance.

Designed originally as material for use in elevated temperatures (up to 1800°F), Nitronic® 60 is a wear-resistant alloy offering outstanding galling resistance in both high and ambient temperatures. It is ideal for any application where galling or seizing is a cause for concern. The material represents a cost-effective solution to combat the effects of wear when compared with nickel and cobalt-based alloys.

Adding silicon and manganese in the alloying process gives the product its galling / wear-resistant qualities even after annealing. The hardness in the annealed condition is excellent - comparable materials would require additional heat treatment to compete with Nitronic® 60 in its annealed state.



## Excellent Performance:

Corrosion resistance is superior and better than 304, although, like most austenitic stainless steels, Nitronic® 60 may suffer stress corrosion cracking in hot chloride ion atmospheres. Resistance to selective attacks such as pitting and crevice corrosion is slightly improved compared to 316 stainless.

## Use in Fasteners:

Fasteners produced in Nitronic® 60 are capable of repetitive assembly and disassembly before the threads are worn or torn. The fastenings will not corrode easily due to the alloy's superior corrosion-resistant qualities.

## About Smiths High Performance

Smiths High Performance is a leading stockholder and supplier of high-performance engineering materials. We are material supply chain partners supporting high-technology market sectors.

## Applications in Motorsport:

With such outstanding wear characteristics and high-temperature performance, it is not surprising that motorsport components benefit from using this material.

Applications include:

- Internal combustion valves
- Valve Stems
- Fastening Systems
- Pin and roller bearings
- Chain drive systems



Further technical data available on the reverse of this Datasheet

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## Chemical Composition (weight, %)

	Ni	Cr	Mn	Si	C	N	S	P	Fe
Min:	8.00	16.00	7.00	3.50		0.08			
Max:	9.00	18.00	9.00	4.50	0.10	0.18	0.03	0.06	Bal

## Mechanical Properties

Ultimate Strength	Yield Strength (0.2% OS)	Elongation	Reduction in Area
100 ksi	55 ksi	35%	55%

## Benefits:

- Wear / galling resistant material
- Good ambient and high-temperature performance
- Better corrosion resistance than 304
- Good hardness in the annealed condition
- Highly suitable for fasteners - can be used in repetitive assembly and disassembly
- Excellent resistance to intergranular attack
- Excellent resistance to sulphide stress cracking (SSC)

## ...where performance matters...

When you purchase high-performance materials from **Smiths High Performance**, you will join some of the biggest and best global engineering companies. We are a Tier 1 supply chain partner to the world's leading motorsport companies. Our unique business structure and ethos allow us to offer services otherwise unavailable in this market sector.

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