Nitronic® 60 Superalloy (UNS S21800)

Product Data Sheet

SMITHS HIGH PERFORMANCE

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 1800ºF), Nitronic® 60 is a wear-resistant alloy offering outstanding galling resistance in both elevated and ambient temperatures and 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.

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

Corrosion Resistance

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

Applications in Motorsport

With such outstanding wear characteristics and high-temperature performance, it is not surprising that motorsport components are a beneficiary of this material.

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 either, due to the alloys superior corrosion-resistant qualities.

Smiths High Performance is a leading stockholder and supplier of high-performance engineering materials to the global motorsport sector. We are supply partners in a range of specialist motorsport markets including **Formula 1, Formula E, NASCAR, MOTO GP, WEC & WRC.**

Further technical data available on the reverse of this Datasheet

Nitronic® 60 Superalloy

Chemical Composition

	Ni	Cr	Mn	Si	C	N	S	P	Fe
Min	8.0	16.0	7.0	3.5		0.08			
Max	9.0	18.0	9.0	4.5	0.10	0.18	0.03	0.06	Bal

Mechanical Properties

	Ulitmate Tensile	Yield Strength (0.2% OS)	Elongation	R/A	Hardness
Min	100 KSi	55 KSi	35%	55%	

Motorsport Applications

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

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)

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When you purchase high-performance materials from **Smiths High Performance**, you will be joining 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 allows us to offer services which are otherwise unavailable in this market sector.

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