



E STEEL SDN BHD (891338-A)

NO 3, Lorong Sungai Puloh 7/KU 6,
Kawasan Perindustrian Sungai Puloh, 42100 Selangor D.E
Tel : 03-3292 8686 / 32928666 / 32928777
Fax : 03-3292 8383



NITRONIC 60 , ALLOY 218, UNS S21800

Nitronic 60 is truly an all purpose metal. This fully austenitic alloy was originally designed as a temperature alloy, and subsequently has good high temperature properties for temperatures around 1800°F. The oxidation resistance of Nitronic 60 is similar to stainless steel 309SS., and far superior to stainless steel 304SS. This grade is best known for its wear and galling resistance.

The additions of Silicon and Manganese have given this alloy a matrix to inhibit wear, galling, and fretting even in the annealed condition. Higher strengths are attainable through cold working the material and is still fully austenitic after severe cold-working. This working does not enhance the anti-galling properties as is normal for carbon steels and some stainless steels. The benefit to the cold or hot work put into the material is added strength and hardness, and the wear resistance does not decrease noticeably. Chromium and Nickel additions give it comparable corrosion to 304 and 316 stainless steels, while having approximately twice the yield strength. The high mechanical strength in annealed parts permits use of reduced cross sections for weight, and cost reductions through the use of thinner stock.

Nitronic 60 is a high Silicon, high Manganese, Nitrogen strengthened austenitic stainless alloy. Nitronic 60 is an all purpose metal that was originally designed as a temperature alloy and therefore has good high temperature properties for temperatures around 1800°F. Nitronic 60 is used in the Aerospace , Food and Drug, Oil Field, Petrochemical, Surgical and Chemical Processing Industries.

Nitronic 60

Chemical Composition Limits							
Weight %	Ni	Cr	Mn	Si	N	Mo	C
Nitronic 60	8-9	16-18	7-9	3.5-4.5	0.08-0.018	0.75 max	0.10 max

Applications

- Automotive valves - can withstand gas temperatures of upto 1500°F for a minimum of 50,000 miles.
- Fastener galling - capable of frequent assembly and disassembly, allowing more use of the fastener before the threads are torn up, also helps to eliminate corroded or frozen fasteners.
- Pins - Used in roller prosthetics & chains to ensure a better fit of parts (closer tolerance, non-lubricated) and longer lasting.
- Marine shafts - better corrosion than types 304 and 316, with double the yield strength.
- Pin and hanger expansion joints for bridges - better corrosion, galling-resistance, low temperature toughness, & high charpy values at sub-zero temps compared to the A36 and A588 carbon steels commonly used.



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Tensile Data

Mechanical Property Requirements Under 0.5"					
	Ultimate Tensile	Yield Strength (0.2% OS)	Elong. in 4D	R/A	Hardness
Min	105 KSi	55 KSi	35%	55%	
Max					
Min	724 MPa	379 MPa			
Max					

Mechanical Property Requirements Over 0.5"					
	Ultimate Tensile	Yield Strength (0.2% OS)	Elong.	R/A	Hardness
Min	95 KSi	50 KSi	35%	55%	
Max					
Min	655 MPa	345 MPa			
Max					