

NITRONIC 60, UNS S21800, ALLOY 218, TYPE 218

Introduction :

Aesteiron continues to expand its product line in UNS S21800 to meet the emerging customer needs, and whereas Aesteiron Steels Pvt. Ltd. is ISO 9001 : 2008 Certified, ASPL has a great Projects in this grade in all parts of the world with renowned suppliers presenting the wide range of services. We pride ourselves in the quality of our products, our competitive pricing and our exceptional customer service. We have been recognized for our outstanding customer service in satisfaction surveys of top- ranked mills in india and all over the world. ASPL, with iron and steel as its main business, manufactures premium steel products with high technologies and a high added value and fosters three major product categories, namely carbon steel, stainless steel and special steel. Through our worldwide marketing network, these premium products not only satisfy the demand on the domestic market but are also exported to more than forty countries and regions in Asia, Africa, Europa and America, extensively applied to various. We are a highly qualified by our customers worldwide as a sustainable and trustworthy to meet their request and need at the right time and the right time and the right area. We strive and stand committed to maintain this respectable position by catering to the requirements of our customers in the best possible way leaving no room for complaints.

Products Available

in forms :

- NITRONIC 60, UNS S21800, ALLOY 218 Plates
- NITRONIC 60, UNS S21800, ALLOY 218 Pipes
- NITRONIC 60, UNS S21800, ALLOY 218 Round Bar
- NITRONIC 60, UNS S21800, ALLOY 218 Tube
- NITRONIC 60, UNS S21800, ALLOY 218 Flanges
- NITRONIC 60, UNS S21800, ALLOY 218 Wire
- NITRONIC 60, UNS S21800, ALLOY 218 Fittings

Standard Available

in forms :

- ASTM A193 / ASME SA193
- ASTM A194 / ASME SA194
- ASTM A276 / ASME SA276
- ASTM A479 / ASME SA479
- ASTM A240 / ASME SA240
- ASTM A182 / ASME SA182
- AMS 5848

Chemical Composition

	NITRONIC 60	UNS S21800	ALLOY 218	TYPE 218
Carbon	0.10max	0.10max	0.10max	0.10max
Manganese	7.0-9.0	7.0-9.0	7.0-9.0	7.0-9.0
Chromium	16.0-18.0	16.0-18.0	16.0-18.0	16.0-18.0
Silicon	3.5-4.5	3.5-4.5	3.5-4.5	3.5-4.5
Nitrogen	0.08-0.18	0.08-0.18	0.08-0.18	0.08-0.18
Molybdenum	0.75max	0.75max	0.75max	0.75max
Nickel	8.0-9.0	8.0-9.0	8.0-9.0	8.0-9.0

Mechanical Properties

	NITRONIC 60	UNS S21800	ALLOY 218	TYPE 218
Ultimate Tensile Strength, ksi(Mpa nom)	105(724)	105(724)	105(724)	105(724)
Yield Strength, ksi(Mpa nom)	55(375)	55(375)	55(375)	55(375)
Elongation %, min	50	50	50	50

SPECIFICATION	ASTM	ASME	AMS
BAR	A193, A194, A276, A479	SA193, SA194, SA276, SA479	5848
SHEET & PLATE	A240	SA240	-
CAST	A351, A743	SA351, SA743	-
FORGING	A182, A193, A194, A276, A479	SA182, SA193, SA194, SA276, SA479	5848

Typical Applications

- Chain link conveyer belts and other components;
- Chain drives;
- Bolts, nuts and other fasteners;
- Valve stems, seats and trim;
- Fittings for pumps and valves in chemical processing industries;
- Bridge pins;

- Pins, bushings and roller bearings;
- Aerospace applications.

Corrosion Resistance

- The uniform corrosion resistance of Nitronic 60 falls between grades 304 and 316.
- However, in a wear system, galling or seizure occurs first, then dimensional loss by wear, and finally corrosion.
- Galling and wear are the first concerns in design.
- Although the uniform corrosion resistance of Nitronic 60 is not quite as good as 316, it offers better pitting resistance to chlorides, stress corrosion cracking resistance and crevice corrosion resistance than grade 316.

Fabrication

- Nitronic 60 can be hot forged.
- After forging the workpiece must be solution annealed.

"Aesteiron House", 107, Kika Street, 4th Floor, Gulalwadi, Mumbai - 400 004, India.

info@aesteiron.com

www.aesteiron.com

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Machinability

- The alloy is difficult to machine, rated at 50% of 304 and 23% of the free cutting carbon steel AISI B1112.
- Sharp, rigid, carbide tipped tools and well powered machines are recommended, with the use of heavy cuts and slow speeds.

Heat Treatment

- Nitronic 60 is fully austenitic and can not be strengthened by heat treatment.
- Solution annealing is carried out at 1060°C, followed by water quenching

Weldability

- Nitronic 60 is readily welded by all conventional processes.
- Autogenous GTAW welds are sound, with wear characteristics approximating to the base metal.
- GTAW welds in heavy sections are also sound and weld tensile strength is slightly higher than base metal.
- Wear properties are near but below base metal.
- Pure argon is used as shielding gas and AWS A5.9 ER 218 filler metal is used.
- Pre-heating and post heating are not needed.



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info@aesteiron.com www.aesteiron.com

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