

SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321, ASTM 321, Grade 321, AFNOR Z 6 CNT 18-10

Introduction :

Aesteiron continues to expand its product line in UNS S32100 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.

Chemical Composition

	SS 321	TYPE 321	WNR 1.4541	UNS S32100	AISI 321	ASTM 321	GRADE 321	AFNOR Z 6 CNT 18-10
Carbon	0.08 max	0.08 max	0.08 max	0.08 max	0.08 max	0.08 max	0.08 max	0.08 max
Manganese	2.00 max	2.00 max	2.00 max	2.00 max	2.00 max	2.00 max	2.00 max	2.00 max
Phosphorus	0.045 max	0.045 max	0.045 max	0.045 max	0.045 max	0.045 max	0.045 max	0.045 max
Sulfur	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max
Silicon	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max
Chromium	17.0-19.0	17.0-19.0	17.0-19.0	17.0-19.0	17.0-19.0	17.0-19.0	17.0-19.0	17.0-19.0
Nickel	9.0-12.0	9.0-12.0	9.0-12.0	9.0-12.0	9.0-12.0	9.0-12.0	9.0-12.0	9.0-12.0
Titanium	5X (C+N) 0.70	5X (C+N) 0.70	5X (C+N) 0.70	5X (C+N) 0.70	5X (C+N) 0.70	5X (C+N) 0.70	5X (C+N) 0.70	5X (C+N) 0.70

Mechanical Properties

	SS 321	TYPE 321	WNR 1.4541	UNS 32100	AISI 321	ASTM 321	GRADE 321	AFNOR Z 6 CNT 18-10
Tensile Strength, ksi[Mpa]	85[585]	85[585]	85[585]	85[585]	85[585]	85[585]	85[585]	85[585]
Yield Strength, ksi	35[240]	35[240]	35[240]	35[240]	35[240]	35[240]	35[240]	35[240]
Elongation %	45	45	45	45	45	45	45	45
Reduction in Area, %	55	55	55	55	55	55	55	55
Hardness, HB	150	150	150	150	150	150	150	150

Standard Available in forms :

- ASTM A182/ ASME SA182 Stainless Steel Pipe Fittings
- ASTM A213 / ASME SA213 Seamless Stainless Steel Pipes
- ASTM A240/ ASME SA240 Stainless Steels Sheets / Plates
- ASTM A249/ ASME SA249 Stainless Steel Welded Tubes
- ASTM A269/ ASME SA269 Stainless Steel Tubes
- ASTM A270/ ASME SA270 Stainless Steel Sanitary Tubes
- ASTM A312/ ASME SA312 Stainless Steel Pipes
- ASTM A403/ ASME SA403 Stainless Steel Pipe Fittings
- ASTM A554/ ASME SA554 Stainless Steel Welded Tubes
- ASTM A731/ ASME SA731 Stainless Steel Pipes
- ASTM A789/ ASME SA789 Stainless Steel Tubes
- ASTM A790/ ASME SA790 Stainless Steel Pipes
- ASTM A791/ ASME SA791 Stainless Steel Tubes

Products Available in forms :

- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Plates
- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Pipes
- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Round Bar
- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Tube
- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Flanges
- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Wire
- SS 321, Type 321, WNR 1.4541, UNS S32100, AISI 321 Fittings

Corrosion Resistance

- Equivalent to Grade 304 in the annealed condition, and superior if a weldment in these grades has not been post-weld annealed or if the application involves service in the 425-900°C range.
- Subject to pitting and crevice corrosion in warm chloride environments, and to stress corrosion cracking above about 60°C.
- Considered resistant to potable water with up to about 200mg/L chlorides at ambient temperatures, reducing to about 150mg/L at 60°C.

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

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Heat Resistance

- Good oxidation resistance in intermittent service to 900°C and in continuous service to 925°C.
- These grades perform well in the 425-900°C range, and particularly where subsequent aqueous corrosive conditions are present.
- 321H has higher hot strength, and is particularly suitable for high temperature structural applications.

Heat Treatment

- Solution Treatment (Annealing) - heat to 950-1120°C and cool rapidly for maximum corrosion resistance.
- Stabilising - heat to 870-900°C for 1 hour per 25mm of thickness and air cool. Stabilisation is recommended for most severe service conditions (above 425°C) and particularly for material annealed at the upper side of the annealing temperature range.
- Stress Relief - Heat to 700°C for 1 to 2 hours and air cool.
- These grades cannot be hardened by thermal treatment.

Welding

- Excellent weldability by all standard fusion methods, both with and without filler metals.
- AS 1554.6 pre-qualifies welding of 321 and 347 with Grade 347 rods or electrodes; high silicon version of 347 is also pre-qualified for welding of 321.

Applications

Typical applications include:

- Aircraft exhaust manifolds
- Expansion joints
- Bellows
- Furnace parts
- Heating element tubing
- Heat Exchangers
- Woven or welded screens for high temperature mineral processing
- Spiral Welded tube for burner pipes and flues



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

info@aesteiron.com

www.aesteiron.com

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