

# Type 422, WNR 1.4935, UNS S42200, AISI 616, Grade 616, ALLOY 422

## Introduction :

Stainless Steel 422 is alternative to stainless steel 403. It is harden able martensitic stainless steel which is being widely used for high temperatures up to 1200°F. It is high-alloy steels that exhibit better corrosion resistance than other steels and this is because of the increased chromium content. It is often used in aircraft parts, refineries, thermal pipe plants, high heat components, pharmaceutical industry, oil refineries, textile industries, rotors, nuclear plants, chemical industries and power industries where high strength ratios is required. It is corrosion resistant to the corrosive action of the atmosphere, fresh water, steam, and a variety of the milder acids and alkalies. It provides good resistance to destructive scaling. It has the highest electrical conductivity and a moderately high embodied cost. It has better strength that of stainless steel 403 at a higher temperature.

## Chemical Composition

	SS 422	TYPE 422	WNR 1.4935	UNS S42200	AISI 616	GRADE 616	ALLOY 422
Carbon	0.20-0.25	0.20-0.25	0.20-0.25	0.20-0.25	0.20-0.25	0.20-0.25	0.20-0.25
Manganese	1.00max	1.00max	1.00max	1.00max	1.00max	1.00max	1.00max
Molybdenum	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25
Chromium	12.0-14.0	12.0-14.0	12.0-14.0	12.0-14.0	12.0-14.0	12.0-14.0	12.0-14.0
Silicon	1.00max	1.00max	1.00max	1.00max	1.00max	1.00max	1.00max
Sulfur	0.03max	0.03max	0.03max	0.03max	0.03max	0.03max	0.03max
Nickel	0.40-1.00	0.40-1.00	0.40-1.00	0.40-1.00	0.40-1.00	0.40-1.00	0.40-1.00
Tungsten	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25	0.75-1.25
Vanadium	0.20-0.50	0.20-0.50	0.20-0.50	0.20-0.50	0.20-0.50	0.20-0.50	0.20-0.50
Phosphorus	0.04max	0.04max	0.04max	0.04max	0.04max	0.04max	0.04max

## Mechanical Properties

	SS 422	TYPE 422	WNR 1.4935	UNS S42200	AISI 616	GRADE 616	ALLOY 422
Tensile Strength Mpa (min)	897	897	897	897	897	897	897
0.2% Yield Strength Mpa(min)	207	207	207	207	207	207	207
Elongation %	15	15	15	15	15	15	15
Reduction in Area, %	-	-	-	-	-	-	-
Hardness, Rockwell B	95max	95max	95max	95max	95max	95max	95max

## 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 :

- Type 422, WNR 1.4935, UNS S42200 Plates
- Type 422, WNR 1.4935, UNS S42200 Pipes
- Type 422, WNR 1.4935, UNS S42200 Round Bar
- Type 422, WNR 1.4935, UNS S42200 Tube
- Type 422, WNR 1.4935, UNS S42200 Flanges
- Type 422, WNR 1.4935, UNS S42200 Wire
- Type 422, WNR 1.4935, UNS S42200 Fittings

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## Applications

- Aircraft parts
- Steam and gas turbine components
- High heat components
- Rotors



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