

SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu WNR 1.4597

Introduction :

SS 204cu has copper 2-4% and nitrogen 0.05-0.25% it is a chromium-magnesium austenitic stainless steel. Hence the addition of copper the alloy has better formability than 201 and 304. In certain media the copper improves corrosion and resistance to stress corrosion cracking. Between 200 and 300 series stainless 204CU bridges the cost-property gap.

Products Available in forms :

- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Plates
- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Pipes
- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Round Bar
- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Tube
- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Flanges
- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Wire
- SS 204Cu, Type 204Cu, UNS S20430, AISI 204Cu Fittings

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

Chemical Composition

	SS 204 Cu	Type 204Cu	UNS S20430	AISI 204Cu	WNR 1.4597
Carbon	0.15max	0.15max	0.15max	0.15max	0.15max
Manganese	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0
Phosphorus	0.060max	0.060max	0.060max	0.060max	0.060max
Sulfur	0.030max	0.030max	0.030max	0.030max	0.030max
Silicon	1.00max	1.00max	1.00max	1.00max	1.00max
Chromium	15.50-17.50	15.50-17.50	15.50-17.50	15.50-17.50	15.50-17.50
Nickel	1.50-3.50	1.50-3.50	1.50-3.50	1.50-3.50	1.50-3.50
Nitrogen*	0.05-0.25	0.05-0.25	0.05-0.25	0.05-0.25	0.05-0.25
Molybdenum	1.00max	1.00max	1.00max	1.00max	1.00max
Copper	2.00-4.00	2.00-4.00	2.00-4.00	2.00-4.00	2.00-4.00
Iron	Bal	Bal	Bal	Bal	Bal

Mechanical Properties

	SS 204 Cu	Type 204Cu	UNS S20430	AISI 204Cu	WNR 1.4597
Tensile Strength, ksi [Mpa]	92[635]	92[635]	92[635]	92[635]	92[635]
Yield Strength, ksi [Mpa]	42[290]	42[290]	42[290]	42[290]	42[290]
Elongation %	75	75	75	75	75
Reduction in Area %	77	77	77	77	77

Annealing

- Type 204 is soaked at 1038-1121°C [1900-2050°F] followed by rapid quenching in water or air.

Welding

- Type 204 is a nitrogen strengthened and austenitic steel possessing high strength and corrosion resistance.
- This alloy can be readily welded and is non-magnetic even after rough forming operations.

Forging

- Type 204 is heated to 1093°C [2000°F], soaked and again heated to 1176°C [2150°F] and finally equalized before being forged.

Forming

- In the forming process, Type 204 need not be per-heated.
- Commonly used welding techniques can be used to form this alloy.

Machinability

- Commonly used machining techniques can be used for Type 204.
- Good machining results can be obtained based on the utilization of resulfurized lubricant and positive and slow speeds.
- Breakers and curlers are used in the welding process due to the thready and tough texture of the chips.

Hardening

- Type 204 can be hardened through a cold working process and hardening will not take place when this alloy is exposed to thermal treatment.

Applications

- Type 204 is commonly used in hose clamps, sewage plant structures, fasteners, handling equipment for bulk solids and structural components in transportation equipment.



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