Alloy 925

Smiths Advanced Metals

Strength & Sour Gas Resistance

Age-hardenable nickel-iron-chromium alloy.

Alloy 925 (UNS N09925) is an age-hardenable nickel-iron-chromium alloy with molybdenum, copper, titanium and aluminium, combining high strength with excellent corrosion resistance.

Its nickel content protects against chloride stress corrosion cracking, while molybdenum and copper resist reducing chemicals. Chromium adds resistance in oxidising environments, and the alloy resists pitting and crevice corrosion.

Age hardening gives the high strength needed in sour gas wells and other demanding oil and gas service.

We stock Alloy 925 as round bar in a broad range of sizes.



Benefits

- High strength after age hardening
- Sour gas & stress corrosion resistance
- Pitting & crevice corrosion resistance

Key Applications

- Downhole & surface well components
- Valves, hangers & packers
- Pump & marine shafting
- High-strength fasteners
- Sour oil & gas equipment

* Chemical Composition (weight %)

	Ni	Cr	Fe	Mo	Cu	Ti	Al	Nb	Mn	Si	C	S
min.	42.0	19.5	22.0	2.5	1.5	1.9	0.1					
max.	46.0	22.5		3.5	3.0	2.4	0.5	0.5	1.0	0.5	0.03	0.03

* As per ASTM B805

* Physical & Mechanical Properties

Density	8.08 g/cm³
Melting Range	1311–1366 °C
Electrical Resistivity	1.17 µΩ·m
Tensile Strength	965 MPa min
0.2% Yield Strength	758 MPa min
Elongation	18% min
Hardness	38 HRC max
Impact (-60 °C)	47 J

* Mechanical properties are minimums for solution annealed and aged bar

Sour Service

Alloy 925 is used in sour oil and gas wells containing H_2S, CO_2 and chlorides, and is covered by NACE MR0175 / ISO 15156 and API 6ACRA.

Heat Treatment

Solution anneal at 980–1040 °C, then age harden in two stages, at 732–749 °C and 621 °C, for 18 hours in total.

Supply

Supplied to ASTM B805 and cut to size in-house.

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bsi ISO 9001 Quality Management Systems CERTIFIED
AS/EN 9100 Aviation Space and Defence CERTIFIED
EN 9120 Aviation Space and Defence CERTIFIED
UKAS TESTING 1930

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