



Quick Facts

- Age hardenable Nickel Iron Chromium alloy
- High strength and excellent corrosion resistance
- Hot worked, solution annealed and aged

Alloy 925 is an age hardenable nickel-iron-chromium alloy with the additions of molybdenum, copper, titanium and aluminium. The alloy's chemical composition is designed to provide a combination of high strength and excellent corrosion resistance. The nickel content provides protection against chloride-iron stress corrosion cracking and in combination with molybdenum and copper, gives outstanding resistance to reducing chemicals. Molybdenum aids resistance to pitting and crevice corrosion, while chromium provides resistance to oxidising environments. Titanium and aluminium form part of the precipitation hardening reaction that greatly increases hardness and strength of the alloy.

The alloy has a high level of corrosion resistance and resists general corrosion, pitting, crevice, intergranular corrosion and stress corrosion cracking. It is particularly useful in sour (H₂S containing) crude oil, natural gas, sulphuric acid, phosphoric acid and seawater.

Typical Applications

Alloy 925 is ideally suited to down-hole and surface gas well components such as valves, hangers, fasteners, nipples, tool joints and packers.

Stock Range

We stock a range of round bar sizes between 76.2mm (3") and 152.4mm (6") diameter. Other sizes are available on request. We can also supply flat bar, rings, blocks and slabs.

Primarily manufactured in Europe



Industry Specifications

- UNS NO9925
- NACE MR-0175/ISO15156
- Schlumberger Specification CMS-Z1KGK.0

Material may also be supplied to Customer specifications, subject to enquiry

Chemical Analysis

Typical analysis:

	C	Mn	P	S	Si	Ni	Cr	Mo	Al	Ti	Nb	Fe	Cu	-
Min	-	-	-	-	-	42.0	19.5	2.5	0.1	1.9	-	22.0	1.5	%
Max	0.03	1.0	0.03	0.03	0.5	46.0	22.5	3.5	0.5	2.4	0.5	-	3.0	%

Material Condition

Alloy 925 is supplied in the hot worked, solution annealed and aged condition.

All material is supplied fully UST tested in accordance with NDE31.

Mechanical Properties

Typical properties in the Solution Annealed and Aged condition:

Tensile PSI (MPa) min	Yield (0.2% offset), PSI (MPa) Min	Elongation in 2" or 4D min%	Reduction of Area min%	Charpy Impacts at - 60°C (-75°F) J (ftlb)	Rockwell hardness HRC
140,000 (965)	110,000 (758)	18	20	Single Min 43 (32) Average min 47 (35)	30-38



Physical Properties

Typical properties at room temperature

Melting Range	1311°C - 1366°C (2392°F- 2490°F)
Room Temp Density	8.08 g/cm ³ (0.292 lb/in ³)
Young's Modulus	199 GPa (28.9 × 10 ³ ksi)
Shear Modulus	77 Gpa (11.2 × 10 ³ ksi)
Poisson's Ratio	0.293
Thermal Conductivity	12.0 W/m°C
Specific Heat	435 Joules/kg°C
Magnetic Permeability @ 200 oersted	1.001

All material we supply has full traceability with inspection certification in accordance with BS EN 10402 3.1. We can supply material with BS EN 10402 3.2 inspection certification on request. We have onsite PCN and SNT Level III inspectors who can test material to your requirements. All information included in this sheet is intended as a guide only and is correct to the best of our knowledge.