BH DÖVME METAL SANAYİ ve TİCARET LTD. ŞTİ.
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Grade	Code	UNS	Nickel Alloys
Incoloy 925	Alloy 925 (2.4852)	N09925	

Nickel Alloy Properties

Incoloy 925 / Alloy 925 is an age-hardenable nickel-iron-chromium alloy. With additions of molybdenum, copper, titanium and aluminum, it provides both high strength and very good corrosion resistance. It is especially known for its resistance to pitting corrosion, crevice corrosion, stress corrosion cracking and sulfide stress cracking in chloride-containing, H_2S-bearing and aggressive oil and gas environments.

Chemical Analysis (Incoloy 925 / Alloy 925)

Ni %	Cr %	Fe %	Mo %	Cu %	Ti %	Al %	Mn %	Si %	Nb %	C %	S %
42.00 – 46.00	19.50 – 22.50	22.00 min.	2.50–3.50	1.50–3.00	1.90–2.40	0.10–0.50	1.00 max.	0.50 max.	0.50 max.	0.03 max.	0.03 max.

Mechanical Properties (Solution Annealed)

Product Form	Rp0.2, MPa	Rm, MPa	Elongation, %	Hardness	Density, g/cm³
Round Bar	271	685	56	76 HRB / ≈ 140 HB	8.08

Application Areas

Application Area	Products	Description
Oil and natural gas sector	Downhole tubular products, valves, packer / hanger / connection parts	The oil and natural gas sector is the most common application area for Incoloy 925. It is preferred when high strength and corrosion resistance are required in severe well environments containing H_2S.
Offshore and seawater applications	Pump shafts, marine service shafts, high-strength piping components	Due to its resistance to seawater and chloride-containing environments, it can be used in parts exposed to both corrosion and mechanical loads.
Chemical process equipment	Fasteners, pump components, machine parts operating in corrosive environments	It provides resistance to rusting, pitting corrosion and stress corrosion cracking in equipment operating in acidic, chloride-containing and sulfur-bearing environments.
Glass and bottle mold sector	Plunger parts, neck rings / insert parts, mold auxiliary components	The glass mold sector is not the main application area of Incoloy 925; however, it can be considered on a project basis for special mold components requiring high-temperature performance, wear resistance, corrosion resistance and mechanical strength.

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Description

Incoloy 925 / Alloy 925 should not be considered only as a corrosion-resistant nickel alloy; it is also a special engineering material whose strength can be significantly increased by heat treatment. In the solution-annealed condition, it offers a more ductile and machinable structure, while aging heat treatment increases its yield and tensile strength. For this reason, it is preferred for load-bearing, pressure-containing or fatigue-sensitive components. The alloy can retain a significant portion of its strength up to approximately 650 °C, which provides an advantage in special applications where temperature and corrosion act together.

Specification

Incoloy 925, INCOLOY® alloy 925, Alloy 925, UNS N09925, W.Nr. 2.4852, VDM® Alloy 925, Nicrofer 4320 Ti, BÖHLER L925, ATI 925™, NiCr20FeMo3TiCuAl

Norm

Product Form	**Standard**
Round bar / wire	ASTM B805 / ASME SB805
Round bar / forged bar / forging stock	ASTM B637 / ASME SB637
Oil and gas / H_2S service applications	ASTM B805 or ASTM B637 + NACE MR0175 / ISO 15156

Alternative Grades

1. Inconel 625
2. Incoloy 825
3. Inconel 718

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