

Incoloy 925

Incoloy 925 is a γ '-phase precipitation-hardenable austenitic nickel-iron-chromium alloy containing molybdenum, copper, titanium and aluminium. It exhibits high strength at temperatures up to approx. 550°C and shows excellent corrosion resistance including resistance to sulfide stress cracking (SSC) under H₂S containing sour gas conditions. It is used for surface and down-hole applications in sour gas wells and in oil production.

Chemical Composition, %

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

Chemical Composition according to ASTM. Some compositional limits of other specifications may vary slightly.

Designation and standards

National Standards	Material designation	Chemical composition	Forgings	Rod and bar	Plate and sheet	Strip	Wire
ASTM ASME NACE	UNS N09925	MR 0175	B637 SB637	B805 SB805	B872 SB872	B872 SB872	B805 SB805
DIN	2.4852 NiCr20FeMo3TiCuAl						

Density 8.08g/cm³

Corrosion resistance

- good resistance to all forms of corrosion in a variety of chemical media under both reducing and oxidizing conditions
- excellent resistance to chloride-induced stress-corrosion cracking

Applications

Incoloy 925 is used in oil and natural gas exploration and production particularly in sour H₂S containing environments.

Typical applications are:

- tool joints, completion tools, hangers and packers
- down-hole and surface gas-well components
- pump shafting and similar high-strength hardware particularly in marine environments and others containing both chlorides and sulfides