

Alloy 625

Alloy 625 is a nickel chromium alloy suitable for applications where strength and corrosion resistance are required. The alloy exhibits excellent strength and toughness at temperatures ranging from cryogenic up to 1100°C.

The strength is due to additions of molybdenum and niobium. These elements also contribute to the superior corrosion resistance and resistance to high temperature oxidation.

These features make alloy 625 suitable for a wide variety of applications. The excellent resistance to pitting and crevice corrosion is utilised in sea water applications. The high strength and oxidation resistance are beneficial in aerospace applications. The strength and general corrosion resistance see the alloy also used in heat exchangers, valves, pumps, nuclear reactors and flue gas desulphurisation systems.

Maher stock alloy 625 in the annealed (grade 1) condition which offers the best combination of strength and corrosion resistance.

National Specifications

ASTM	UNS	SAE AMS	British Standard	Werkstoff
B564 B446	N06625	5666	3076 NA 21	2.4856

Material may also be released to Customer Specifications, subject to enquiry.

Technical Data

Nominal Composition by Percent

	C	Mn	Si	P	S	Cr	Ni	Co	Ti	Al	Mo	Cb+Ta	Fe	-
Min	-	-	-	-	-	20.0	58.0	-	-	-	8.0	3.15	-	%
Max	0.10	0.50	0.50	0.15	0.15	23.0	-	1.0	0.40	0.40	10.0	4.15	5.0	%

Typical Mechanical Properties (Oil patch)

Annealed Grade 1 up to 100mm Section	PSI	MPa	%
Tensile Strength, min	120,000	827	-
Yield Strength (0.2% offset), min	60,000	413	-
Elongation on 4D, min	-	-	30
Hardness max	-	35Rc	-