



ALLOY-SEARCH

ALLOY-SEARCH DATASHEET

2.4856 – Alloy 625 – Grade 1 Annealed

DESCRIPTION

2.4856 – Alloy 625 is a nickel-based superalloy that possesses high strength levels, resistance to elevated temperatures and anti-corrosion properties. It is available in grade 1 (annealed) and grade 2 (solution annealed) conditions and doesn't require a precipitation hardening.

APPLICABLE STANDARDS

UNS N06625
EN-ISO NiCr22Mo9Nb
AMS 5599 / 5666 / 5869 / 5879
ASTM B-443 / B-446
BS NA21 3072 / 3073 / 3075 / 3076
JIS G 4901 / 4902 / NCF 625
NACE MR0103
Other standards available upon request

CHEMICAL COMPOSITION*

Element	C	Mn	Si	P	S	Cr	Nb+Ta	Co	Mo	Fe	Al	Ti	Ni
Min %	-	-	-	-	-	20.00	3.15	-	8.00	-	-	-	58.0
Max %	0.10	0.50	0.50	0.015	0.015	23.00	4.15	1.00	10.00	5.00	0.40	0.40	Balance

*Per ASTM B-446 & AMS 5666.

MECHANICAL PROPERTIES*

Property	Minimum
UTS	760 Mpa
Rp0.2	345 Mpa
Elongation % in 4D	25%
Reduction of Area %	35%
Elastic Module	207.5 GPa
Hardness	150 HB.
Charpy V-Notch Impact	25 J.

*Per ASTM B-446 & AMS 5666.

TYPICAL PRODUCTS & USAGE

Wire
Rod
Bar
Plate
Marine
Aviation
Chemical Processing
Corrosive Environments

MATERIAL APPLICATION

Alloy 625 displays superb corrosion resistance and is available in two conditions, where solution annealed (grade 2) possesses a lower yield-strength. If the hardness is < 35 HRC it complies with NACE MR0103 as it is then more resistant to Sulfide-Stress-Cracking (SSC) and Stress-Corrosion-Cracking (SCC). Strength of this alloy is derived from the stiffening effect of molybdenum and niobium (columbium) on the nickel-chrome matrix, therefore a precipitation hardening treatment is not required. Alloy 625 is also an excellent choice for sea-water applications, given that salts do not easily cause localized pitting. It also finds uses in the aerospace and petrochemical industry for the same reasons, corrosion resistance, high yield-strength and weldability make for a solid all-round material grade.

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