

Alloy 625 - BARS

Applications

INDUSTRIAL

Offshore Industry, Furnace Linings, Geothermal Power Plants, ect.

Chemical Composition (Nominal) %

Element	Percentage (%)
Ni (Nickel)	58.0 min
Cr (Chromium)	20.0 - 23.0
Mo (Molybdenum)	8.0 - 10.0
Nb + Ta (Niobium + Tantalum)	3.15 - 4.15
Fe (Iron)	5.0 max
Co (Cobalt)	1.0 max
Mn (Manganese)	0.50 max
Si (Silicon)	0.50 max
Ti (Titanium)	0.40 max
Al (Aluminum)	0.40 max
C (Carbon)	0.10 max
P (Phosphorus)	0.015 max
S (Sulfur)	0.015 max

Features

GRADE 1

- Exceptional resistance to pitting, crevice corrosion, erosion and intergranular corrosion
- Immunity to chloride-induced stress corrosion cracking
- Good resistance to mineral acids such as nitric, phosphoric, sulfuric and hydrochloric acid

- Good resistance to alkalis and organic acid
- Good mechanical properties

GRADE 2

- Excellent creep strength above about 600°C
- Good resistance to many types of hot gas corrosion, particularly chlorination

Physical Properties

Density 8.47 g/cm³ (0.306 lb/in³)

Standard

ASTM B446

Material

INCONEL 625 / UNS N06625 / 2.4856

Mechanical Properties

Heat Treatment	Tensile Strength min, ksi (MPa)	Yield Strength min, (0.2% offset) ksi (MPa)	Elongation in 2 in. or 50 mm (or 4 D), min, %
Grade 1 (annealed): Up to 4	120 (827)	60 (414)	30
Grade 1 (annealed): Over 4 to 10	110 (758)	50 (345)	25
Grade 2 (solution annealed)	100 (690)	40 (276)	30

Surface

Bright annealed / annealed

Package

Wooden case

Heat Treatment

Soft Annealing / Solution Annealing

Alloy 625 is used in applications where the operating temperatures are below 600°C (1,112°F) in the soft annealed condition (grade 1).

The soft annealing is carried out at temperatures of 950 to 1,050°C (1,742 to 1,922°F); a temperature of 980°C (1,796°F) is preferred.

For applications above 600°C (1,112°F), the solution annealed variant of Alloy 625 (grade 2), which provides optimized creep strength, is used. The solution heat treatment should be carried out in the temperature range between 1,080°C and 1,160°C (1,976 and 2,120°F), preferably at 1,120°C (2,048°F).

Alloy 625 - TUBES

Applications

INDUSTRIAL

Offshore Industry, Furnace Linings, Geothermal Power Plants, ect.

Chemical Composition (Nominal) %

Element	Percentage (%)
Ni (Nickel)	58.0 min
Cr (Chromium)	20.0 - 23.0
Mo (Molybdenum)	8.0 - 10.0
Nb + Ta (Niobium + Tantalum)	3.15 - 4.15
Fe (Iron)	5.0 max
Co (Cobalt)	1.0 max
Mn (Manganese)	0.50 max
Si (Silicon)	0.50 max
Ti (Titanium)	0.40 max
Al (Aluminum)	0.40 max
C (Carbon)	0.10 max
P (Phosphorus)	0.015 max
S (Sulfur)	0.015 max

Features

GRADE 1

- Exceptional resistance to pitting, crevice corrosion, erosion and intergranular corrosion
- Immunity to chloride-induced stress corrosion cracking
- Good resistance to mineral acids such as nitric, phosphoric, sulfuric and hydrochloric acid

- Good resistance to alkalis and organic acid
- Good mechanical properties

GRADE 2

- Excellent creep strength above about 600°C
- Good resistance to many types of hot gas corrosion, particularly chlorination

Physical Properties

Density
8.47 g/cm³ (0.306 lb/in³)

Standard

ASTM B444 for seamless pipe and tube

Material

INCONEL 625 / UNS N06625 / 2.4856

Mechanical Properties

Heat Treatment	Tensile Strength min, ksi (MPa)	Yield Strength min, (0.2% offset) ksi (MPa)	Elongation in 2 in. or 50.8 mm (or 4 D), min, %
Grade 1 (annealed)	120 (827)	60 (414)	30
Grade 2 (solution annealed)	100 (690)	40 (276)	30

Surface

Bright annealed / annealed

Package

Wooden case

Heat Treatment

Soft Annealing / Solution Annealing

Alloy 625 is used in applications where the operating temperatures are below 600°C (1,112°F) in the soft annealed condition (grade 1).

The soft annealing is carried out at temperatures of 950 to 1,050°C (1,742 to 1,922°F); a temperature of 980°C (1,796°F) is preferred.

For applications above 600°C (1,112°F), the solution annealed variant of Alloy 625 (grade 2), which provides optimized creep strength, is used. The solution heat treatment should be carried out in the temperature range between 1,080°C and 1,160°C (1,976 and 2,120°F), preferably at 1,120°C (2,048°F).