Inconel 625 Forged Bar (UNS N06625) — Technical Data Sheet

Inconel 625 Forged Bar supplied to ASTM B446 / ASME SB446 — values are minimum requirements per the governing ASTM specification.

Chemical Composition (ASTM B446)

Element	Content
Nickel (Ni)	Balance
Chromium (Cr)	20.0–23.0%
Molybdenum (Mo)	8.0–10.0%
Niobium + Tantalum (Nb + Ta)	3.15–4.15%
Iron (Fe)	5.00% max.
Cobalt (Co)	1.00% max.
Carbon (C)	0.10% max.
Manganese (Mn)	0.50% max.
Silicon (Si)	0.50% max.
Phosphorus (P)	0.015% max.
Sulfur (S)	0.015% max.
Aluminum (Al)	0.40% max.
Titanium (Ti)	0.40% max.

Mechanical Properties (Minimum, Room Temperature)

Product Form	Condition	Tensile Strength, min.	Yield Strength (0.2%), min.	Elongation, min.
Forged bar up to 101.6 mm (4 in.) dia.	ASTM B446 Grade 1, annealed	>=827 MPa (120 ksi)	>=414 MPa (60 ksi)	30%
Forged bar over 101.6 to 254 mm dia.	ASTM B446 Grade 1, annealed	>=758 MPa (110 ksi)	>=345 MPa (50 ksi)	25%
Forged bar, all sizes	ASTM B446 Grade 2, solution annealed	>=690 MPa (100 ksi)	>=276 MPa (40 ksi)	30%

Physical Properties (Typical)

Property	Value
Alloy	Inconel 625
UNS	N06625
Werkstoff	2.4856
Density	Approx. 8.44 g/cm³
Melting Range	Approx. 1290–1350°C
Alloy Type	Nickel-chromium-molybdenum
Strengthening	Solid-solution (Mo, Nb)

Heat Treatment

Condition	Treatment Behind the Forged Bar
Grade 1	Annealed at 871 °C (1600 °F) minimum for strength-led duty
Grade 2	Solution annealed at 1093 °C (2000 °F) minimum for creep-led service

Standards and Designations

Standard	Product or Application
ASTM B446 / ASME SB446	Nickel alloy bar and rod, Grades 1 and 2
ASTM B564 / AMS 5666	Forging route for blanks; aerospace bar route
UNS N06625 - W.Nr. 2.4856 - NiCr22Mo9Nb	Material designations

Typical Supply Dimensions — Inconel 625 Forged Bar

Product Form	Typical Supply Range
As-forged bar	100–300 mm diameter, larger on request
Peeled forged bar	100–300 mm diameter with a machined skin
Forged blocks	Square sections to 400 mm across flats

Surface Finishes

Surface Condition	Typical Use
As-forged	Forging skin kept for rough machining of this forged bar.
Peeled	Machined skin for shops that want clean stock first.
Rough machined	Turned surface sized for final machining allowances.

Values are for reference; the mill test certificate prevails for final acceptance. Dimensions, conditions, and surface finishes are confirmed at quotation.