

Inconel 601 Wire (UNS N06601) — Technical Data Sheet

Inconel 601 wire supplied to ASTM B166 / ASME SB166 — values are minimum requirements for the wire as delivered; properties do not apply after straightening and cutting.

Chemical Composition (ASTM B166)

Element	Content
Nickel (Ni)	58.0–63.0%
Chromium (Cr)	21.0–25.0%
Aluminium (Al)	1.0–1.7%
Iron (Fe)	Balance
Carbon (C)	0.10% max.
Manganese (Mn)	1.00% max.
Silicon (Si)	0.50% max.
Copper (Cu)	1.00% max.
Sulphur (S)	0.015% max.

Minimum Strength by Temper (ASTM B166 Table 3, wire as delivered)

Condition	Tensile Strength	Yield Strength, 0.2% Offset	Elongation
Annealed	80–115 ksi (550–790 MPa)	30–60 ksi (205–415 MPa)	35–65%
Cold-drawn	120–205 ksi (825–1415 MPa)	100–195 ksi (690–1345 MPa)	3–20%

Delivery Conditions

Delivery State	Typical Diameter	Notes
Hot rolled wire rod	6.0–20.0 mm	Drawing stock with mill scale, for redraw
Hot rolled, annealed	5.5–19 mm	Coil form, softened for downstream forming
Hot rolled, annealed and pickled	5.5–19 mm	Descaled to a bright surface
Cold drawn, annealed	0.2–12 mm	Softest product wire, best ductility
Cold drawn, temper	0.2–12 mm	Higher strength for screens and formed parts

Physical Properties (Approx.)

Property	Value
Alloy	Inconel 601
UNS	N06601
Werkstoff	2.4851
Density	Approx. 8.11 g/cm³
Melting Range	Approx. 1360–1411 °C
Modulus	Approx. 206 GPa
Alloy Type	Nickel-chromium-aluminium
Strengthening	Solid solution

Standards and Designations

Standard	Product / Application
ASTM B166	Nickel-chromium-iron alloy rod, bar and wire
ASME SB166	ASME specification for pressure equipment applications
UNS N06601	Material designation for Inconel 601
W.Nr. 2.4851	European material number (NiCr23Fe)
DIN 17753	Wrought nickel alloy wire, properties
ISO 9724	Nickel and nickel alloy wire
EN 10095	Heat-resistant steels and nickel alloys
JIS NCF 601	Japanese designation for Alloy 601

Surface Finishes

Surface Condition	Typical Characteristics / Applications
Bright Annealed	Clean oxide-free surface after annealing in protective atmosphere
Pickled	Descaled surface after chemical cleaning of the annealed wire
Coated	Lubricant or soap coating on request for downstream redrawing
Straightened	Wire straightened from the coil for cutting and feeding

Typical Supply Dimensions — Wire

Product Form	Typical Supply	Length
Wire (Coil / Spool)	0.2–12 mm dia., typical	Coil, spool or custom
Wire Rod (Drawing Stock)	6.0–20.0 mm dia.	Coil
Fine Wire	0.10–0.80 mm dia.	Spool
Straightened and Cut Wire	1.0–12 mm dia.	Straight lengths
Custom Wire	To drawing	Custom

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

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