

Nickel 200 / 201 Wire (UNS N02200 / N02201) — Technical Data Sheet

Wire wire supplied to DIN 17753 and ISO 9724 — figures are typical published ranges for the ordered diameter and temper; ASTM B160 covers bar and rod only.

Chemical Composition — ASTM shared composition table

Element	Nickel 200 (UNS N02200)	Nickel 201 (UNS N02201)
Nickel (Ni), min.	99.0%	99.0%
Copper (Cu), max.	0.25%	0.25%
Iron (Fe), max.	0.40%	0.40%
Manganese (Mn), max.	0.35%	0.35%
Carbon (C), max.	0.15%	0.02%
Silicon (Si), max.	0.35%	0.35%
Sulfur (S), max.	0.01%	0.01%

Typical Strength Ranges by Temper (wire as delivered)

Condition	Tensile Strength	Yield Strength (0.2%)	Elongation
Annealed, typical	55–95 ksi (380–655 MPa)	15–45 ksi (105–310 MPa)	30–50%
Cold-drawn, typical	100–185 ksi (690–1275 MPa)	80–175 ksi (550–1205 MPa)	2–15%

Delivery Conditions

Delivery State	Typical Diameter	Notes
Hot rolled wire rod	6.0–20.0 mm	Scale-covered drawing stock, supplied for redraw
Hot rolled, annealed	5.5–19 mm	Coils softened so downstream forming runs clean
Hot rolled, annealed and pickled	5.5–19 mm	Descaled to a bright surface before dispatch
Cold drawn, annealed	0.2–12 mm	Softest product wire, offering the best ductility
Cold drawn, temper	0.2–12 mm	Higher strength for screens and formed components

Physical Properties (Approx.)

Property	Nickel 200 (N02200)	Nickel 201 (N02201)
Density	Approx. 8.89 g/cm³	Approx. 8.89 g/cm³
Melting range	Approx. 1435–1446 °C	Approx. 1435–1446 °C
Specific heat at 20 °C	Approx. 456 J/kg·K	Approx. 456 J/kg·K
Curie temperature	Approx. 360 °C (680 °F)	Approx. 360 °C (680 °F)
Modulus of elasticity	Approx. 205 GPa	Approx. 207 GPa
Thermal conductivity at 20 °C	Approx. 70.3 W/m·K	Approx. 79.3 W/m·K
Electrical resistivity at 20 °C	Approx. 0.096 µΩ·m	Approx. 0.085 µΩ·m
Thermal expansion, 20–100 °C	Approx. 13.3 µm/m·K	Approx. 13.2 µm/m·K
Poisson's ratio	Approx. 0.29	Approx. 0.29
Magnetic behaviour	Ferromagnetic at room temperature	Ferromagnetic at room temperature

Standards and Designations

Standard	Product or Application
DIN 17753	Wrought nickel wire, delivery conditions
ISO 9724	Nickel and nickel alloy wire
ASTM B160	Bar and rod only; wire falls outside its scope

Heat Treatment

Condition	Typical Treatment
Annealed	Held between 705 and 925 °C (1300–1697 °F), then cooled
Stress Relieved	705–870 °C (1300–1600 °F) where straightness or residual stress demands it
Custom Condition	Heat treatment according to the agreed specification

Surface Finishes (Wire)

Surface Condition	Typical Use
Bright Annealed	Protective-atmosphere annealing leaves this wire oxide-free.
Pickled	Acid cleaning descaled this wire after the anneal.
Coated	A light lubricant film on this wire for downstream redrawing.

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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