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

Round Bar supplied to ASTM B160 and ASME SB160 in UNS N02200 and N02201 — values are minimum requirements; the ordered condition and section size govern final acceptance.

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%

Minimum Room-Temperature Mechanical Properties (ASTM B160)

Condition and Section	Tensile Strength, min.	Yield Strength (0.2%), min.	Elongation, min.
Nickel 200, cold-worked, rounds ≤ 25.4 mm (1 in.)	≥80 ksi (550 MPa)	≥60 ksi (415 MPa)	10%
Nickel 200, cold-worked, rounds 25.4–101.6 mm (1–4 in.)	≥75 ksi (515 MPa)	≥50 ksi (345 MPa)	15%
Nickel 200, cold-worked, squares, hexagons and rectangles	≥65 ksi (450 MPa)	≥40 ksi (275 MPa)	25%
Nickel 200, hot-worked, all sections and sizes	≥60 ksi (415 MPa)	≥15 ksi (105 MPa)	35%
Nickel 200, annealed, rods and bars of all sizes	≥55 ksi (380 MPa)	≥15 ksi (105 MPa)	40%
Nickel 201, hot-worked, all sections and sizes	≥50 ksi (345 MPa)	≥10 ksi (70 MPa)	40%
Nickel 201, annealed, all products and sizes	≥50 ksi (345 MPa)	≥10 ksi (70 MPa)	40%

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
ASTM B160	Nickel rod and bar, UNS N02200 and N02201
ASME SB160	ASME counterpart for pressure equipment
DIN 17752	Nickel bar and rod, European procurement

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 (Round Bar)

Surface Condition	Typical Use
Hot-Worked	As-rolled surface on this round bar, for parts that will be machined all over.
Cold Drawn	Drawn stock giving this round bar close diameter control and a smooth skin.
Peeled	A machined skin on this round bar with uniform diameter for turning.

Typical Supply Dimensions — Round Bar

Product Form	Typical Supply	Length
Round Bar	6–500 mm dia.	Cut to length or random
Hot-Worked Round Bar	25–300 mm dia.	Cut to length or random
Cold-Drawn Round Bar	6–100 mm dia.	Cut to length
Bright Round Bar	6–150 mm dia.	Cut to length or random
Peeled Round Bar	20–400 mm dia.	Cut to length
Centreless-Ground Round Bar	3–100 mm dia.	Cut to length
Forged Round Bar	100–500 mm dia.	Cut to length
Custom Round Bar	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.