Hastelloy C-276 Round Rod (UNS N10276 / W.Nr. 2.4819) — Technical Data Sheet

Round Rod supplied to ASTM B574 and ASME SB574 for UNS N10276 — the standard sets one solution-annealed condition for rod and bar across eleven grades, with DIN 17752, ISO 9723 and VdTÜV 400 covering European and international orders.

Chemical Composition — ASTM B574 limits, UNS N10276

Element	Content
Nickel (Ni)	57.0% min. (balance)
Molybdenum (Mo)	15.0–17.0%
Chromium (Cr)	14.5–16.5%
Tungsten (W)	3.0–4.5%
Iron (Fe)	4.0–7.0%
Cobalt (Co)	2.50% max.
Manganese (Mn)	1.00% max.
Vanadium (V)	0.35% max.
Silicon (Si)	0.08% max.
Carbon (C)	0.010% max.
Phosphorus (P)	0.040% max.
Sulphur (S)	0.030% max.

Minimum Mechanical Properties (ASTM B574, solution annealed)

Condition and Grade	Tensile Strength, min.	Yield Strength (0.2%), min.	Elongation, min.
Solution Annealed — UNS N10276	≥690 MPa (100 ksi)	≥283 MPa (41 ksi)	40%

Physical Properties (Approx.)

Property	Value
Alloy	Hastelloy C-276
UNS	N10276
Werkstoff	2.4819
Density	Approx. 8.89 g/cm³
Melting Range	Approx. 1325–1370 °C
Elastic Modulus	Approx. 205 GPa
Thermal Conductivity	Approx. 10.2 W/m·°C at 20 °C
Specific Heat	Approx. 427 J/kg·°C
Expansion Coefficient	Approx. 11.2 µm/m·°C (20–100 °C)
Electrical Resistivity	Approx. 1.30 µΩ·m at 20 °C
Alloy Type	Nickel-molybdenum-chromium with tungsten
Strengthening	Solid solution and cold work
Magnetic Behaviour	Practically non-magnetic at ambient temperature

Standards and Designations

Standard	Product or Application
ASTM B574 / ASME SB574	Nickel-chromium-molybdenum-tungsten rod and bar, UNS N10276 among eleven grades
DIN 17752 / ISO 9723	German and international bar documents
VdTÜV 400 / NACE MR0175	German data sheet and sour-service qualification

Heat Treatment (solution anneal and release)

Condition	Typical Treatment
Solution Annealed	Held between 1120 and 1160 °C, then water quenched to dissolve the precipitates that follow slow cooling
Hot-Worked	Delivered as-rolled or as-forged, with the anneal agreed where the order calls for it
Cold-Drawn	Drawn after annealing, with the reduction recorded so the higher yield strength is documented
Slow-Cool Hazard	Cooling slowly through the 650–1090 °C band precipitates µ and P phases, so a rapid quench follows every anneal
Sour-Service Release	NACE MR0175 orders carry a per-lot hardness record against the 35 HRC ceiling

Surface Finishes (Round Rod)

Surface Condition	Typical Use
Cold Drawn	Drawn stock giving this round rod close diameter control and a smooth bright skin.
Centreless Ground	Ground diameter and straightness on this round rod for pump shafts and plungers.
Bright Annealed	Protective-atmosphere annealing leaves this round rod oxide-free and ready to redraw.

Typical Supply Dimensions — Round Rod

Product Form	Typical Supply	Length
Round Rod	3–50 mm dia.	Cut to length
Cold-Drawn Round Rod	3–25 mm dia.	Cut to length
Annealed Round Rod	3–50 mm dia.	Cut to length
Straightened Round Rod	3–50 mm dia.	Cut to length
Custom Round Rod	To drawing	Custom

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