# Inconel 718 Seamless Tube (UNS N07718) — Technical Data Sheet

Inconel 718 Seamless Tube supplied to ASTM B983 / ASME SB983 — values are minimum requirements per the governing specification.

## Chemical Composition (ASTM B983 / ASME SB983)

| Element | Content |
|---|---|
| Nickel (Ni) | 50.0–55.0% |
| Chromium (Cr) | 17.0–21.0% |
| Iron (Fe) | Balance |
| Niobium + Tantalum (Nb + Ta) | 4.75–5.50% |
| Molybdenum (Mo) | 2.80–3.30% |
| Titanium (Ti) | 0.65–1.15% |
| Aluminum (Al) | 0.20–0.80% |
| Cobalt (Co) | 1.00% max. |
| Carbon (C) | 0.08% max. |
| Manganese (Mn) | 0.35% max. |
| Silicon (Si) | 0.35% max. |
| Phosphorus (P) | 0.015% max. |
| Sulfur (S) | 0.015% max. |
| Copper (Cu) | 0.30% max. |
| Boron (B) | 0.002–0.006% |

## Mechanical Properties (Minimum, Room Temperature)

| Product Form | Condition | Tensile Strength, min. | Yield Strength (0.2%), min. | Elongation, min. | Hardness |
|---|---|---|---|---|---|
| Seamless tube, all sizes | ASTM B983, solution annealed + precipitation hardened | >=1034 MPa (150 ksi) | >=862 MPa (125 ksi) | 20% | 35–45 HRC |
| Bar and forgings, reference | ASTM B637, solution treated + aged | >=1275 MPa (185 ksi) | >=1034 MPa (150 ksi) | 12% | >=331 HBW |

## Physical Properties (Typical)

| Property | Value |
|---|---|
| Alloy | Inconel 718 |
| UNS | N07718 |
| Werkstoff | 2.4668 |
| Density | Approx. 8.19 g/cm³ |
| Melting Range | Approx. 1260–1336°C |
| Alloy Type | Nickel-chromium-iron |
| Strengthening | Precipitation hardening |

## Heat Treatment

| Step | Treatment Behind the Seamless Tube |
|---|---|
| Solution anneal | Near 940 to 1010 °C, then air cooled |
| First age | 718 °C for 8 hours, then furnace cooled at about 55 °C per hour |
| Second age | 621 °C for 8 hours, then air cooled |

## Standards and Designations

| Standard | Product or Application |
|---|---|
| ASTM B983 / ASME SB983 | Seamless pipe and tube, precipitation hardened |
| AMS 5589 / AMS 5590 | Aerospace seamless tube, aged and solution treated |
| UNS N07718 - W.Nr. 2.4668 - NiCr19Fe19NbMo | Material designations |

## Typical Supply Dimensions — Inconel 718 Seamless Tube

| Product Form | Typical Supply Range |
|---|---|
| Seamless tube | OD 6–219 mm, wall 0.5–15 mm |
| Precision tube | OD 3–50 mm with tight-tolerance wall |
| Coils and U-bends | To project drawings on this seamless tube |

## Surface Finishes

| Surface Condition | Typical Use |
|---|---|
| Pickled | Standard annealed surface for fabrication runs of this seamless tube. |
| Bright annealed | Smooth scale-free bore and OD for instrumentation and clean service. |
| Beveled end | Weld preparation to the agreed bevel for butt-welded spools. |

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