

Inconel 718 Sheet and Plate — Technical Data Sheet

UNS N07718 hot-rolled and cold-rolled plate, sheet, and strip to ASTM B670 — minimum room-temperature values per the governing standard.

Chemical Composition (ASTM B670 / AMS 5596 / AMS 5597)

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.
Copper (Cu)	0.30% max.
Phosphorus (P)	0.015% max.
Sulfur (S)	0.015% max.
Boron (B)	0.006% max.

Minimum Room-Temperature Mechanical Properties

Product Form	Standard	Condition	Tensile Strength	Yield Strength, 0.2% Offset	Elongation
Plate, sheet, and strip up to 25.4 mm	ASTM B670	Solution treated + aged	≥ 1241 MPa (180 ksi)	≥ 1034 MPa (150 ksi)	≥ 12%
Plate over 25.4 to 57.2 mm	ASTM B670	Solution treated + aged	≥ 1241 MPa (180 ksi)	≥ 1034 MPa (150 ksi)	≥ 10%
Seamless pipe and tube (reference)	ASTM B983	Solution annealed + precipitation hardened	≥ 1034 MPa (150 ksi)	≥ 862 MPa (125 ksi)	≥ 20%

Physical Properties (Approx.)

Property	Value
Density	8.19 g/cm³ (0.296 lb/in³)
Melting Range	1260–1336 °C (2300–2440 °F)
Elastic Modulus	200 GPa (29.0 × 10³ ksi)
Thermal Conductivity	11.4 W/m·°C at 20 °C
Specific Heat	435 J/kg·°C
Expansion Coefficient	13.0 µm/m·°C (20–100 °C)
Typical Aged Hardness	36–44 HRC
Alloy Type	Nickel-chromium-iron, precipitation hardenable

Standards and Designations

Standard / Designation	Product / Application
ASTM B670 / ASME SB670	Plate, sheet, and strip, elevated-temperature service
ASTM B906	General requirements for flat-rolled product
ASTM B637	Bar and forging stock reference for matched hardware
SAE AMS 5596	Sheet, strip, and plate, solution treated and aged
SAE AMS 5597	Sheet, strip, and plate, precipitation hardened
DIN 17750	Nickel alloy flat-rolled standard, W.Nr. 2.4668
NACE MR0175 / ISO 15156	Sour-service qualification (reference)
UNS N07718 · W.Nr. 2.4668 · EN NiCr19NbMo	Designations

Typical Supply Dimensions

Product Form	Typical Supply Range	Length
Hot-rolled plate	4.8–57.2 mm thick	Cut to length and width
Cold-rolled sheet	0.25–6.4 mm thick	Cut to length and width
Strip and coil	0.13–6.4 mm thick, coil form	Coil or custom lengths
Cut blanks	Any stocked gauge	To customer drawing

Supply Conditions and Finishes

Surface Condition	Typical Use
Solution Annealed & Pickled	Standard delivered condition for forming stock
Aged & Pickled	Final high-strength condition after double aging
Bright Annealed	Smooth, scale-free surface for visible and clean service
Mill Finish	As-rolled surface for machining and further fabrication

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

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Document Control · Inconel 718 Sheet and Plate Technical Data Sheet · Rev. 1.0 · Issued 15 September 2026