

Nickel Alloy 718 / 2.4668 / UNS N07718

Application Examples

- High temperature
- Wet corrosion
- High strength

Product Features

Nickel Alloy 718 – High-Performance Nickel Alloy for Extreme Temperatures and Heavy Loads

Properties of Alloy 718

Nickel Alloy 718 is a precipitation-hardenable, high-temperature resistant nickel-based alloy with exceptional heat resistance and high-temperature tensile strength up to 750°C. The alloy also exhibits excellent creep resistance up to 700°C.

Compared to conventional hot-work steels, Alloy 718 offers significantly higher hot strength, making it particularly suitable for heavily loaded components in extreme environments. Its composition, which includes nickel, chromium, and molybdenum, ensures outstanding corrosion and oxidation resistance, even in aggressive media.

Specifications and Applications of Alloy 718

Alloy 718 is available in three main specification ranges tailored to specific industries:

- **Alloy 718 according to AMS** – for aerospace applications with high strength at elevated temperatures
- **Alloy 718 according to API** – specifically for the oil and gas industry, including sour gas applications
- **Alloy 718 according to ASTM** – for demanding high-performance industrial applications requiring maximum strength and durability

In addition, voestalpine Specialty Metals offers a high-strength API variant with a yield strength of 150 ksi (1034 MPa).

Typical Applications of Alloy 718

Alloy 718 is used in a wide range of high-temperature and high-performance applications, including:

- Gas turbines, aircraft engines, and nuclear reactors
- Components for the oil and gas industry, including valves and pumps
- Extrusion tooling for copper and copper alloys
- Piercing mandrels for hot forming of steel and brass
- Die inserts and hot-shearing tools for demanding forming operations

Why Choose Alloy 718 from voestalpine Specialty Metals?

- Top quality and purity through advanced metallurgy
- Reliable high-temperature resistance up to 750°C
- Excellent mechanical properties under extreme load conditions
- Outstanding corrosion resistance in challenging environments
- Tailor-made solutions for aerospace, energy, and oil & gas industries

Nickel Alloy 718 is the ideal choice for applications that require heat resistance, strength, and long-term performance in demanding industrial environments.



Specification Overview

Material number	2.4668
Alloy	718
EN designation	NiCr19NbMo
UNS	UNS N07718
Böhler designation	L718
ASTM standard	Sheet: ASTM B670 Bar: ASTM B637/ ASME SB637 AMS 5662 (solution annealed)/ AMS 5663 (aged) API 6A/ NACE
DIN EN standard	Sheet metal: DIN EN 17744 / 17750 Bar: DIN EN 17744 / 17752
Density	8.2 g/ccm
Magnetizability	Unavailable
Rp0.2	1034 N/mm ² (ASTM B637/AMS 5663)
Rm	1275 N/mm ² (ASTM B637/AMS 5663)

Chemical Composition:

(reference values in %)

C	Cr	Mo	Ni	Ti	Al	Nb	B	Fe
0.020	18.00	3.0	Rest/Bal	0.95	0.50	5.10	0.003	18.50



Stock Bar

Ø in mm

12.70	16.00	19.05	25.40	31.75	40.00	44.45	50.80
●	●	●	●	●	●	●	●
60.00	70.00	80.00	90.00	101.60	120.00	130.00	140.00
●	●	●	●	●	●	●	●
152.00	180.00	203.20					
●	●	●					

Wst.Nr. 2.4668 / Alloy 718,

AMS 5662, capable of AMS 5663,

ASTM B637 / ASME SB-637 UNS N07718,

Inspection certificate: EN10204 3.1

Stock plate and sheet

Thickness in mm

1.50	2.00	2.50	3.20	4.00	5.00	6.35	10.00
●	●	●	●	●	●	●	●
12.00	16.00	20.00					
●	●	●					

Wst.No. 2.4668 / Alloy 718

AMS 5596, ASTM B670 UNS N07718

Inspection certificate: EN10204 3.1

Other dimensions on request. Factory quantities also possible. All information without guarantee and for informational purposes only.

