



# ALLOY-SEARCH

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## 2.4668 – Alloy 718 – ASTM B637 – API 6A

### DESCRIPTION

Inconel 718 Superalloy is a nickel-chromium based austenitic material which offers excellent corrosion and oxidation resistance. The alloy is commonly applied as solution treated however is also age hardenable by proper precipitation heat treatment and developed to operate in service temperatures up to 760° C (1400°F).

### APPLICABLE STANDARDS

UNS N07718  
API 6A 718 / 6A CRA  
EN-ISO 15156 / NiCr19Fe19Nb5Mo3  
ASTM B637 / B670  
DIN 2.4668  
Inconel 718  
AMS 5596 / 5597 / 5662 / 5663  
Böhler L718  
NACE MR0175  
Other standards available upon request

### CHEMICAL COMPOSITION\*

Element	C	Mn	Si	P	S	Cr	Co	Mo	Nb+Ta	Ti	Al	Fe	Cu	Ni
Min %	-	-	-	-	-	17.0	-	2.8	4.75	0.65	0.20	-	-	50.0
Max %	0.08	0.35	0.35	0.015	0.015	21.0	1.00	3.3	5.50	1.15	0.80	11.4	0.03	55.0

\* Per ASTM B-637

### MECHANICAL PROPERTIES\*

Property	Minimum
UTS	1275 Mpa
Rp0.2	1034 Mpa
Elongation % in 4D	12%
Reduction of Area %	15%
Elastic Module	200 Gpa
Hardness	331 HB
Charpy V-Notch Impact	-

\* Per ASTM B-637 – Solution Treated and Precipitation Age Hardened.

### TYPICAL PRODUCTS & USAGE

Wire  
Rod  
Bar  
Forging  
Valves  
Oil & Gas  
Aerospace  
Petrochemical

### MATERIAL APPLICATION

Alloy 718 is the workhorse of the oil- & gas sector and commonly applied in high-temperature applications. It has decent machinability and weldability, making it a widely selected alloy for various applications especially if high-strength corrosion resistance is required. It's resistance to post-weld cracking due to the various elements makes it an excellent choice most applications. 718 is available in various sizes and grades, although the most commonly available are per ASTM B-637 and API 6A in Solution Treated and Precipitation Age Hardened conditions.

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