RIGHTON BLACKBURNS
METALS AND PLASTICS

EXPERTISE COLLABORATION INTEGRITY

Nickel Alloys

AMS 5662 (Alloy 718) Bar

Datasheet Updated
05 August 2021

SPECIFICATIONS

Commercial	Alloy 718
Aerospace	AMS 5662

A precipitation-hardenable nickel chromium grade with extremely high strength.

CHEMICAL COMPOSITION

Element	% Present
Nickel (Ni)	50.00 - 55.00
Chromium (Cr)	17.00 - 21.00
Molybdenum (Mo)	2.80 - 3.30
Niobium (Columbium) (Nb)	4.75 - 5.50
Copper (Cu)	0.00 - 0.30
Aluminium (Al)	0.20 - 0.80
Carbon (C)	0.00 - 0.08
Cobalt (Co)	0.00 - 1.00
Manganese (Mn)	0.00 - 0.35
Nickel + Cobalt (Ni+Co)	50.00 - 55.00
Phosphorous (P)	0.00 - 0.15
Silicon (Si)	0.00 - 0.35
Sulphur (S)	0.00 - 0.15
Titanium (Ti)	0.65 - 1.15
Boron (B)	0.00 - 0.06
Columbium + Tantalum (Cb+Ta)	4.75 - 5.50
Iron (Fe)	Balance

SUPPLIED FORMS

- Bar

APPLICATIONS

- Turbine components
- Cryogenic storage tanks
- Jet engines
- Pump bodies and parts
- Rocket motors
- Thrust reversers
- Nuclear fuel element spacers
- Hot extrusion tooling
- High strength bolting
- Down hole shafting

CHARACTERISTICS

- Good processing properties in the solution annealed condition
- Good strength/ductility properties from sub-zero temperatures to over 750°C
- Goood mechanical short and long-term properties, and excellent fatigue strength in the age hardened condition
- Excellent mechanical properties at low temperatures
- Excellent resistance to stress corrosion cracking and pitting in chloride-containing media
- Excellent resistance to stress corrosion cracking and sulphide stress cracking in sour (H2S-containing) oilfield environments
- Non-magnetic and spark resistant
- Excellent creep-rupture strength at temperatures up to 700°C (1300°F)
- Outstanding weldability

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MECHANICAL PROPERTIES

Typical

Property	Value
Proof Stress	70 MPa
Tensile Strength	135 MPa
Elongation A50 mm	45 %
Hardness Rockwell B	100 HRB