

AMS 5660, AMS 5661, Nickel Alloy 901

Typical Applications

- Aircraft
- Rocket Engines
- Gas Turbine Components
- Furnace Components

Nickel Alloy 901 (AMS 5660, AMS 5661, BS HR55) is a nickel-based alloy offering high strength and outstanding resistance to corrosion and oxidation at extreme temperatures. Primarily composed of nickel, along with substantial amounts of chromium and smaller additions of iron and silicon, this alloy is exceptionally versatile for demanding industrial applications.

Its standout quality is retaining high strength and stability in temperatures up to 600°C. This allows Nickel Alloy 901 to withstand incredibly hot and arduous environments that would cause most other metals to fail or rapidly degrade. Components made from this alloy maintain their integrity despite continuous exposure to hot gases, combustion products or thermal cycling.

This capability stems from the carefully balanced composition of Nickel Alloy 901. The high nickel content coupled with generous chromium provides a protective chromium oxide layer on the metal's surface when heated, shielding it from oxidation damage. The addition of silicon enhances this protective effect and the iron helps fine-tune the physical properties of the alloy. Combined, these elements allow Nickel Alloy 901 products to continuously perform in the hottest sections of industrial plants, power generation equipment and vehicle engines.

Potential applications that could benefit from Nickel Alloy 901's thermal and corrosion resistance include furnace components, parts for aircraft and land-based gas turbines, rocket engine nozzles, nuclear power systems, heat exchangers and any component facing extremely high heat.

Technical specification

Related Specifications

AMS 5660

AMS 5661

BS HR55

US NO9901

Specific Gravity

8.19 g/cm3

Chemical Composition (WT %)

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Min

Max

Ni	40	45
Cr	11	14
Si	-	0.4
S	-	0.03
Co	-	1
Fe	Bal	-
Al	-	0.35
C	-	0.1
Mn	-	0.5
Mo	5	6.5
Ti	2.8	3.1
Cu	-	0.5

Typical Mechanical Properties (in the solution treated condition)

0.2% Proof Stress	MPA	862
Tensile Strength	MPA	1207
Elongation	%	15
Reduction	%	19

*Need more information? **Get in touch***

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