

Inconel IN718

High Temperature Strength and Corrosion Resistance

A high temperature, high performance, Corrosion & Oxidation resistant Nickel-Chromium alloy



Benefits

- Excellent mechanical properties
- Corrosion & Oxidation resistant
- High-Temperature Strength

Applications

- Gas turbine components
- Instrumentation parts
- Power industry parts
- Process industry parts



Physical Properties

| | |
|--------|-----------------------|
| Colour | Grey |
| Type | Nickel-chromium alloy |

Mechanical Properties

| | As Built ¹ | | Heat Treated ² | |
|-----------------------------------|-----------------------|------------|---------------------------|------------|
| | Vertical | Horizontal | Vertical | Horizontal |
| Ultimate tensile strength, Rm | 970 MPa | 1090 MPa | 1375 MPa | 1505 MPa |
| Yield Strength, R _{p0.2} | 650 MPa | 800 MPa | 1145 | 1240 |
| Elongation at break, A | 32% | 25% | 17% | 12% |
| Density (g/cm ³) | 8.15 | | | |

Hardness

| | As Built | Heat Treated |
|--------------------------|----------|--------------|
| Vickers Hardness HRC/BHN | 47 | n.a. |

¹ Tensile testing according to ISO 6892 -1:2009

² Tensile properties heat treated (acc. AMS 2774 and AMS 5662)

³ Hardness measurement according to EN ISO 6508-1, Heat treated hardness measurement according to r DIN EN ISO 6506-1:2014

Powder chemical composition (wt.-%)

| Element Min. Max. | Element Min. Max. | Element Min. Max. |
|-------------------|-------------------|-------------------|
| Fe | Rem | |
| Ni | 50.00 | 55.00 |
| Cr | 17.00 | 21.00 |
| Nb | 4.75 | 5.50 |
| Mo | 2.80 | 3.30 |
| Ti | 0.65 | 1.15 |
| Al | 0.20 | 0.80 |
| Co | | 1.00 |
| Cu | | 0.30 |
| Si | | 0.35 |
| Mn | | 0.35 |
| Ta | | 0.05 |
| C | | 0.08 |
| S | | 0.015 |
| P | | 0.015 |
| B | | 0.006 |
| Pb | | 0.0005 |
| Se | | 0.0020 |
| Bi | | 0.00003 |

Call: 028 9070 6940

Email: sales@laserproto.com

Web: www.laserproto.com

[Click here](#) to request a quote

Please be advised that all information provided in this document is representative of typical properties and as advised by the material manufacturer. Performance characteristics of these products may vary according to product application, operating conditions or with end use.

Laser Prototypes Ltd makes no warranties of any type, express or implied, with respect to any of the goods or services supplied. This includes but is not limited to any warranty of fitness for a particular purpose or of properties or of suitability for a specific application. Data are subject to change without notice as part of our continuous development and improvement processes.