

Eine ausscheidungshärtbare Nickel-Chrom-Legierung mit wesentlichen Gehalten an Eisen, Niob und Molybdän in Verbindung mit geringeren Aluminium- und Titangehalten. Verbindet Korrosionsbeständigkeit und hohe Festigkeit mit sehr guter Schweißbarkeit, einschliesslich Beständigkeit gegen Schweißrissigkeit. Die Legierung hat sehr gute Zeitstandfestigkeit bei Temperaturen bis 700°C. Verwendung in Gasturbinen, Raketentriebwerken, Raumfahrzeugen und Kernreaktoren.

A precipitation-hardenable nickel-chromium alloy containing also significant amounts of iron, niobium, and molybdenum along with lesser amounts of aluminium and titanium. It combines corrosion resistance and high strength with outstanding weldability including resistance to postweld cracking. The alloy has excellent creep-rupture strength at temperatures to 1300°F (700°C). Used in gas turbines, rocket motors, spacecraft, nuclear reactors, pumps and tooling.

| Produktformen Product Forms | Blech, Band, Rundstab, Flachstab, Sechskantprofile, Rohr, Draht, Schmiedestücke, Strangpressprofile | Sheet, Plate, Strip, Round Bar, Flat Bar, Hexagon, Tube, Pipe, Wire, Extruded Section, Forging Stock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|-----|-----|----------------|-----|-----|----------------|----|-----|----------------|----|-----|----------------|----|-----|---|--|-----|-----|----------------|-----|-----|----------------|----|-----|----------------|----|-----|----------------|----|-----|
| Normen und Bezeichnungen | UNS N07718, (N07719) ASTM B 637, B 670 ASME SB-637, SB-670 SAE AMS 5589, 5590, 5596, 5597, 5662 – 5664, 5832, 5914, 5950, 5962 W-Nr.: 2.4668 | ASME Code Cases 1993, 2206, 2222, N-62, N-208, N-253 NACE MR-01-75 AECMA Pr EN 2404, 2405, 2407, 2408, 2952, 2961, 3219, 3666 ISO 6208, 9723 – 9725 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Major Specifications | UNS N07718, (N07719) ASTM B 637, B 670 ASME SB-637, SB-670 SAE AMS 5589, 5590, 5596, 5597, 5662 – 5664, 5832, 5914, 5950, 5962 W-Nr.: 2.4668 | ASME Code Cases 1993, 2206, 2222, N-62, N-208, N-253 NACE MR-01-75 AECMA Pr EN 2404, 2405, 2407, 2408, 2952, 2961, 3219, 3666 ISO 6208, 9723 – 9725 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chem. Zusammensetzung Chemical Composition, % | Grenzwerte Ni ^a ... 50.0 - 55.0 Ti 0.65 - 1.15 Si max. 0.35 Cr ... 17.0 - 21.0 Al 0.20 - 0.80 P max. 0.015 Fe Rest Co ^c .. max. 1.00 S max. 0.015 Nb ^b .. 4.75 - 5.50 C max. 0.08 B max. 0.006 Mo .. 2.80 - 3.30 Mn ... max. 0.35 Cu max. 0.30 ^a Plus Co ^b Plus Ta ^c wenn bestimmt | Limiting Ni ^a ... 50.0 - 55.0 Ti 0.65 - 1.15 Si max. 0.35 Cr ... 17.0 - 21.0 Al 0.20 - 0.80 P max. 0.015 Fe ... Remainder Co ^c ... max. 1.00 S max. 0.015 Nb ^b .. 4.75 - 5.50 C max. 0.08 B max. 0.006 Mo .. 2.80 - 3.30 Mn ... max. 0.35 Cu max. 0.30 ^a Plus Co ^b Plus Ta ^c if determined | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Physikalische und thermische Eigenschaften Physical Constants and Thermal Properties | Dichte, lb/in ³ 0.296 g/cm ³ 8.19 Schmelzbereich, °F 2300 - 2437 °C 1260 - 1336 Spezifische Wärme, Btu/lb•°F 0.104 J/kg•°C 435 Curie-Temperatur, °F -170 °C -112 Permeabilität bei 200 Oe (15.9 kA/m) 1.0011 Ausdehnungsbeiwert, 70 - 200°F, 10 ⁻⁶ in/in•°F 7.2 21 - 93°C, µm/m•°C 13.0 Wärmeleitfähigkeit, Btu • in/ft ² •h•°F 79 W/m•°C 11.4 Spez. elektr. Widerstand, ohm•circ mil/ft 751 µohm•m 1.25 | Density, lb/in ³ 0.296 g/cm ³ 8.19 Melting Range, °F 2300 - 2437 °C 1260 - 1336 Specific Heat, Btu/lb•°F 0.104 J/kg•°C 435 Curie Temperature, °F -170 °C -112 Permeability at 200 Oersted (15.9 kA/m) 1.0011 Coefficient of Expansion, 70 - 200°F, 10 ⁻⁶ in/in•°F 7.2 21 - 93°C, µm/m•°C 13.0 Thermal Conductivity, Btu • in/ft ² •h•°F 79 W/m•°C 11.4 Electrical Resistivity, ohm•circ mil/ft 751 µohm•m 1.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Typische mechanische Eigenschaften Typical Mechanical Properties | (Ausscheidungsgehärtet) Zeitstandfestigkeit (1000 h) <table border="1"> <thead> <tr> <th></th> <th>ksi</th> <th>MPa</th> </tr> </thead> <tbody> <tr> <td>1100°F / 595°C</td> <td>110</td> <td>760</td> </tr> <tr> <td>1200°F / 650°C</td> <td>86</td> <td>590</td> </tr> <tr> <td>1300°F / 705°C</td> <td>53</td> <td>370</td> </tr> <tr> <td>1400°F / 760°C</td> <td>24</td> <td>170</td> </tr> </tbody> </table> | | ksi | MPa | 1100°F / 595°C | 110 | 760 | 1200°F / 650°C | 86 | 590 | 1300°F / 705°C | 53 | 370 | 1400°F / 760°C | 24 | 170 | (Precipitation Hardened) Rupture Strength (1000 h) <table border="1"> <thead> <tr> <th></th> <th>ksi</th> <th>MPa</th> </tr> </thead> <tbody> <tr> <td>1100°F / 595°C</td> <td>110</td> <td>760</td> </tr> <tr> <td>1200°F / 650°C</td> <td>86</td> <td>590</td> </tr> <tr> <td>1300°F / 705°C</td> <td>53</td> <td>370</td> </tr> <tr> <td>1400°F / 760°C</td> <td>24</td> <td>170</td> </tr> </tbody> </table> | | ksi | MPa | 1100°F / 595°C | 110 | 760 | 1200°F / 650°C | 86 | 590 | 1300°F / 705°C | 53 | 370 | 1400°F / 760°C | 24 | 170 |
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