**INCONEL® X-750**

**Key Features**
- Good creep rupture strength at high temperatures
- Very good at cryogenic temperatures
- Age hardenable
- High temperature dynamic applications

**INCONEL® X-750 available in:**
- Round wire
- Bars or lengths
- Flat wire
- Shaped wire
- Rope/Strand

**Packaging**
- Coils
- Spools
- Bars or lengths

**IMPORTANT**
We will manufacture to your required mechanical properties.

**Technical Datasheet**
AWS 014 Rev.1

**Important Advantages to You, Our Customer**
- **Range:** 0.025mm to 21mm (.001" to .827")
- **Delivery:** within 3 weeks
- **Order:** 3m to 3t (10 ft to 6000 Lbs)
- **Wire to your spec**
- **E.M.S available**
- **Technical support**

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Manufacturing quality, delivering reliability | alloywire.com

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### Chemical Composition

<table>
<thead>
<tr>
<th>Element</th>
<th>Min %</th>
<th>Max %</th>
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<tbody>
<tr>
<td>C</td>
<td>-</td>
<td>0.08</td>
</tr>
<tr>
<td>Mn</td>
<td>-</td>
<td>1.00</td>
</tr>
<tr>
<td>Si</td>
<td>-</td>
<td>0.50</td>
</tr>
<tr>
<td>S</td>
<td>-</td>
<td>0.01</td>
</tr>
<tr>
<td>Cr</td>
<td>14.00</td>
<td>17.00</td>
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<tr>
<td>Ni</td>
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<td>-</td>
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<td>Nb/Cb</td>
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<tr>
<td>Ti</td>
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<td>2.75</td>
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<tr>
<td>Al</td>
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<td>1.00</td>
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<tr>
<td>Fe</td>
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<td>9.00</td>
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<tr>
<td>Co</td>
<td>-</td>
<td>1.00</td>
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<tr>
<td>Ta</td>
<td>-</td>
<td>0.05</td>
</tr>
<tr>
<td>Cu</td>
<td>-</td>
<td>0.50</td>
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### Specifications

- **AMS 5667**
- **AMS 5671**
- **AMS 5698 (No 1 Spring Temper)**
- **AMS 5699 (Spring Temper)**
- **ASTM B637**
- **BS HR 505**
- **GE B14H41**
- **ISO 15156-3**
- **(NACE MR 0175)**

### Key Features
- Good creep rupture strength at high temperatures
- Not as strong as Nimonic 90
- Very good at cryogenic temperatures
- Age hardenable
- High temperature dynamic applications

### Typical Applications
- Nuclear reactors
- Gas turbines
- Rocket engines
- Pressure vessels
- Aircraft structures

### Designations

- **Wnr. 2.4669**
- **UNS N07750**
- **AWS 014**

### Density

- 8.28 g/cm³
- 0.299 lb/in³

### Melting Point

- 1430 °C
- 2600 °F

### Coefficient of Expansion

- 12.6 μm/m °C (20 – 100 °C)
- 7.0 x 10⁻⁶ in/in °F (70 – 212 °F)

### Modulus of Rigidity

- 75.8 kN/mm²
- 10994 ksi

### Modulus of Elasticity

- **(Spring Temper + Aged)**
  - 218.0 kN/mm²
  - 31619 ksi
- **(Spring Temper + 3 Part Heat Treated)**
  - 212.4 kN/mm²
  - 30806 ksi
- **(No.1 Spring Temper + Aged)**
  - 213.7 kN/mm²
  - 30995 ksi

### Heat Treatment of Finished Parts

<table>
<thead>
<tr>
<th>Condition as supplied by Alloy Wire</th>
<th>Type</th>
<th>Temperature</th>
<th>Time (Hr)</th>
<th>Cooling</th>
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<tbody>
<tr>
<td>Spring Temper</td>
<td>Age Harden</td>
<td>650</td>
<td>1200</td>
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<tr>
<td>Spring Temper (3 Part)</td>
<td>Anneal</td>
<td>1150</td>
<td>2100</td>
<td>2 ** *</td>
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<td></td>
<td>Stabilize</td>
<td>843</td>
<td>1550</td>
<td>24</td>
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<td>Age Harden</td>
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<td>No. 1 Temper</td>
<td>Age Harden</td>
<td>730</td>
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### Properties

<table>
<thead>
<tr>
<th>Condition</th>
<th>Approx. tensile strength</th>
<th>Approx. operating temperature depending on load^{^}** and environment</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N/mm²</td>
<td>ksi</td>
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<tr>
<td>Annealed</td>
<td>800 – 1000</td>
<td>116 – 145</td>
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<tr>
<td>No. 1 Temper</td>
<td>900 – 1150</td>
<td>130 – 167</td>
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<tr>
<td>Spring Temper</td>
<td>1100 – 1500</td>
<td>159 – 217</td>
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<tr>
<td>No. 1 Temper + Aged</td>
<td>1300 – 1450</td>
<td>188 – 210</td>
</tr>
<tr>
<td>Spring Temper + Aged</td>
<td>1350 – 1750</td>
<td>196 – 254</td>
</tr>
<tr>
<td>Spring Temper + 3 part heat treated</td>
<td>1100 – 1250</td>
<td>159 – 181</td>
</tr>
</tbody>
</table>

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^{^\*\*} for diameters below 1.00mm contact AWI Technical department  
^{^}\* Dynamic applications = active/lively/changing

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**Technical Datasheet AWS 014 Rev.1**

**INCONEL® X-750**

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**AS 9100**  **ISO 9001**  **ISO 14001**  **ISO 45001**

Aerospace & Defence  Quality Management  Environmental  Health & Safety