Applications

- Aircraft structures
- Gears & shafts
- Automotive

Product Description

7075 aluminium alloy is a very high strength aerospace aluminium and is commonly used in applications where the strength of the material is critical and where the need for good corrosion resistance is not important. Offering superior stress corrosion resistance, 7075 provides very high yield and tensile strengths which is dictated by the particular chosen temper.

Key features:

- Very high strength aerospace aluminium
- Used where high strength is critical and where good corrosion resistance is not important
- Up to 465 MPa yield strength and 540 MPa tensile strength depending on temper
- Superior stress corrosion

Chemical Composition (weight %)

<table>
<thead>
<tr>
<th></th>
<th>Si</th>
<th>Fe</th>
<th>Cu</th>
<th>Mn</th>
<th>Cr</th>
<th>Mg</th>
<th>Zn</th>
<th>Ti</th>
<th>Al</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>min.</td>
<td>0.40</td>
<td>1.20</td>
<td>0.18</td>
<td>0.30</td>
<td>0.28</td>
<td>2.10</td>
<td>5.10</td>
<td>Bal</td>
<td>Bal</td>
<td></td>
</tr>
<tr>
<td>max.</td>
<td>0.50</td>
<td>2.00</td>
<td>0.30</td>
<td>0.30</td>
<td>0.28</td>
<td>2.90</td>
<td>6.10</td>
<td>0.20</td>
<td>Bal</td>
<td>0.15</td>
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</tbody>
</table>

Machinability

Fair

Availability

Bar, sheet, plate

Mechanical Properties

<table>
<thead>
<tr>
<th>Tensile Strength</th>
<th>Yield Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-78 ksi, 275 - 540 MPa</td>
<td>24-68 ksi, 455 - 465 MPa</td>
</tr>
</tbody>
</table>

Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>2.81 g/cm³</td>
</tr>
<tr>
<td>Melting Point</td>
<td>635 °C</td>
</tr>
<tr>
<td>Modulus of Elasticity</td>
<td>72 GPa</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>134-160 W/m.K</td>
</tr>
<tr>
<td>Electrical Resistivity</td>
<td>40% IACS</td>
</tr>
</tbody>
</table>

Properties dependent on chosen temper.

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

- Smiths Belfast: 02895 908 897
- Smiths Biggleswade: 01767 604 704
- Smiths Birmingham: 0121 728 4940
- Smiths Bristol: 0117 971 2800
- Smiths Chelmsford: 01245 466 664
- Smiths Gateshead: 0191 469 5428
- Smiths Horsham: 01403 261 981
- Smiths Leeds: 0113 307 5167
- Smiths London: 020 7241 2430
- Smiths Manchester: 0161 794 8650
- Smiths Norfolk: 01603 789 878
- Smiths Nottingham: 0115 925 4801
- Smiths Redruth: 01209 315 512
- Smiths Verwood: 01202 824 347
- Smiths Verwood: 0161 794 8650

Quality & Testing:

All information in our data sheet is based on approximate testing and is stated to the best of our knowledge and belief. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of trading.

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