Alloy 276
Technical Datasheet

Nickel Molybdenum Chromium Alloy

Typical Applications
• Heat exchangers
• Pressure vessels
• Sour gas components
• Reactor vessels
• Desulphurisation systems
• Pumps & valves
• Incinerators
• Flanges & fittings

Product Description
Alloy 276 is a nickel-molybdenum-chromium alloy which includes a small amount of tungsten. In corrosion resistant terms, it is one of the most superior products on the market. The material is highly resistant to a wide range of chemicals and gases and is used particularly in oil, gas and chemical production. Alloy 276 has a very low carbon and silicon content.

Availability
Bar, tube, pipe

Material Specifications
• Excellent corrosion resistance in both oxidizing and reducing environments
• Resistant to chloride stress corrosion cracking
• Particularly resistant to hydrochloric acid, sulphuric acid and hydrofluoric acid
• Easily welded

Corrosion Resistance
Alloy 276 displays excellent corrosion resistance to a wide range of media including general corrosion, stress corrosion cracking and pitting and crevice corrosion in extreme environments. Its resistance to carbide precipitation during welding maintains corrosion resistance in the heat-affected zones of welded joints. This makes the material ideal for use in the fabrication of weldable pressurised vessels for sour gas service. Alloy 276 is particularly resistant to certain acids including, hydrochloric, sulphuric and hydrofluoric, or a combination.

Chemical Composition (weight %)

<table>
<thead>
<tr>
<th></th>
<th>Ni</th>
<th>Cr</th>
<th>Fe</th>
<th>C</th>
<th>Mn</th>
<th>Si</th>
<th>Mo</th>
<th>W</th>
<th>Co</th>
<th>V</th>
<th>P</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>Bal</td>
<td>14.5</td>
<td>4.0</td>
<td>0.010</td>
<td>1.0</td>
<td>0.08</td>
<td>15.0</td>
<td>3.0</td>
<td>17.0</td>
<td>4.50</td>
<td>2.5</td>
<td>0.35</td>
</tr>
<tr>
<td>Max</td>
<td>Bal</td>
<td>16.5</td>
<td>7.0</td>
<td>0.010</td>
<td>1.0</td>
<td>0.08</td>
<td>17.0</td>
<td>4.50</td>
<td>2.5</td>
<td>0.35</td>
<td>0.04</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Mechanical Properties

<table>
<thead>
<tr>
<th>Yield Strength 0.2% Offset</th>
<th>Ultimate Tensile Strength</th>
<th>Elongation in 2 in. (%)</th>
<th>Hardness (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>41,000 psi 283 MPa</td>
<td>100,000 psi 690 MPa</td>
<td>40</td>
<td>100 Rockwell B</td>
</tr>
</tbody>
</table>

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.

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