**UR™ 16: A 304L nitric acid grade**

**STANDARDS**

> ASTM 304L NAG

**CHEMICAL ANALYSIS - WEIGHT %**

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>S</th>
<th>P</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ .015</td>
<td>.1</td>
<td>1</td>
<td>≤ .005</td>
<td>.015</td>
<td>18 - 20</td>
<td>11.5 - 12.5</td>
<td>.2</td>
<td>≤ .04</td>
</tr>
</tbody>
</table>

**MECHANICAL PROPERTIES**

> Rp 0.2 (typical value) = 265 MPa (38 ksi)
> Rp 0.2 (minimal value) = 200 MPa (29 ksi)
> Rm (typical value) = 570 MPa (83 ksi)
> Rm (minimal value) = 500 MPa (73 ksi)
> Elongation A = 45

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Rp0.2</th>
<th>Rm</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>≥ 175</td>
<td>≥ 450</td>
</tr>
<tr>
<td>70</td>
<td>≥ 130</td>
<td>≥ 380</td>
</tr>
<tr>
<td>100</td>
<td>≥ 110</td>
<td>≥ 340</td>
</tr>
<tr>
<td>200</td>
<td>≥ 100</td>
<td>≥ 300</td>
</tr>
</tbody>
</table>

**FABRICATION**

The fabrication of this steel doesn't present any difference compared with the one of a 304L type steel, except on 2 points:

**Heat treatment**

The delivery state of plates consists of a heat treatment at a temperature between 900 °C and 1000 °C. **Please consult technical services for any heat treatment during fabrication.**
APPLICATIONS

This steel is used preferably to a UR™ 304L low carbon content steel in nitric media of middle concentration (up to about 65%), especially when a great functioning security is required.

Examples:
- dissolver for re-treatment industry
- water and acid rinser

Welding

Without deposited metal, UR™16 can be welded with GTAW, PAW, EBW processes which have no influence on the chemical composition of the deposit (C, Si, S, P very low).

Concerning the weldings with deposited metal, i.e. GTAW with deposited metal, manual welding with electrode..., it would be better to consult Industeel technical services for the choice of suitable deposited materials.

Products of the following type have been successfully used:

<table>
<thead>
<tr>
<th>C</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>Cu</th>
<th>Fe</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 0.030</td>
<td>28</td>
<td>36</td>
<td>3.8</td>
<td>1.8</td>
<td>base</td>
</tr>
</tbody>
</table>

W 2.4656

PLATE PROCESSING

Technical data and information are to the best of our knowledge at the time of printing. However, they may be subject to some slight variations due to our ongoing research programme on steels. Therefore, we suggest that information be verified at time of enquiry or order. Furthermore, in service, real conditions are specific for each application. The data presented here are only for the purpose of description, and considered as guarantees when written formal approval has been delivered by our company. Further information may be obtained from the address opposite.

YOUR CONTACTS

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HUEY TESTS (A262-C) 5 PERIODS IN HNO₃ (65% - BOILING)

<table>
<thead>
<tr>
<th>Attack rate (mm/year)</th>
</tr>
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<tbody>
<tr>
<td>0.2</td>
</tr>
<tr>
<td>48h</td>
</tr>
</tbody>
</table>

RESULTS observed on 304L industrial castings sensitized to 675°C - 1 hour
UR™ 16 sensitized to 675°C - 3 hour

UR™ 16