**Avesta ER309/309L**

**TIG rod, high-alloyed, austenitic stainless, special applications**

### Classifications

<table>
<thead>
<tr>
<th>AWS A5.9 / SFA-5.9</th>
<th>EN ISO 14343-A</th>
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<tbody>
<tr>
<td>ER309L</td>
<td>W 23 12 L</td>
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</table>

### Characteristics and typical fields of application

TIG rod of ER309L / W 23 12 L type for welding dissimilar joints. Well-suited for depositing intermediate layers when welding of clad materials. Designed for very good welding and wetting characteristics as well as good safety after dilution when welding dissimilar joints. Due to the high ferrite content, ~16 FN, the weld metal is less susceptible to hot cracking. Suitable for service temperatures between -110°F and 575°F.

### Base materials

Primarily used for surfacing (buffer layer) unalloyed or low-alloyed steels and when joining non-molybdenum-alloyed stainless and carbon steels.

Joints and mixed joints between austenitic steels such as

1.4301 X5CrNi18-10, 1.4306 X2CrNi19-11, 1.4308 GX5CrNi19-10, 1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4408 GX5Cr-NiMo19-11-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4541 X6CrNiTi18-10, 1.4550 X6CrNiNb18-10, 1.4552 GX5Cr-NiNb19-11, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4581 GX5CrNiMoNb19-11-2, 1.4583 X10CrNiMoNb18-12, 1.4948 X6CrNi18-10

UNS S30400, S30403, S30809, S31600, S31603, S31635, S32100, S34700, S31640

AISI 304, 304L, 316, 316L, 316Ti, 321, 347

or mixed joints between austenitic and heat resistant steels such as

1.4713 X10CrAlSi7, 1.4724 X10CrAlSi13, 1.4742 X10CrAlSi18, 1.4826 GX40CrNiSi22-10, 1.4828 X15CrNiSi20-12, 1.4832 GX25CrNi-Si20-14, 1.4837 GX40CrNiSi25-12

with ferritic steels to pressure boiler steels P295GH and fine grained structural steels to P355N, ship building steel grades A – E, AH 32 – EH 36, A40 – F40, etc.

### Typical analysis

<table>
<thead>
<tr>
<th>C (wt-%)</th>
<th>Si</th>
<th>Mn</th>
<th>Cr</th>
<th>Ni</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.02</td>
<td>0.5</td>
<td>1.7</td>
<td>23.5</td>
<td>13.2</td>
</tr>
</tbody>
</table>

### Mechanical properties of all-weld metal - typical values (min. values)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yield strength $R_{p0.2}$ ksi</th>
<th>Tensile strength $R_m$ ksi</th>
<th>Elongation A ($L_0=5d_0$) %</th>
<th>Impact energy ISO-V KV J 68°F</th>
<th>111</th>
</tr>
</thead>
<tbody>
<tr>
<td>u</td>
<td>64 ($\geq 46$)</td>
<td>84 ($\geq 75$)</td>
<td>34 ($\geq 25$)</td>
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</tbody>
</table>

u untreated, as-welded – shielding gas Ar

### Operating data

**Dimension inch**

| 1/16 × 36 inch |
| 1/8 × 36 inch |
| 3/32 × 36 inch |
| 5/32 × 36 inch |

### Approvals

ABS, CWB

All information provided is based upon careful investigation and intensive research. However, we do not assume any liability for correctness and information is subject to change without notice.

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