Cr-Ni austenitic stainless steels are the most versatile with the most extended use. They exhibit good properties regarding corrosion resistance, forming and weldability. ACX 150 is more resistant to intergranular corrosion in welds than ACX 120, due to its low carbon content.

**CHEMICAL COMPOSITION**

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
<th>Cr</th>
<th>Ni</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤0.030</td>
<td>≤0.75</td>
<td>≤2.00</td>
<td>≤0.040</td>
<td>≤0.015</td>
<td>17.50-19.00</td>
<td>8.00-10.00</td>
</tr>
</tbody>
</table>

**APPLICATIONS**

- Tubes
- Boiler forge
- Chemical industry
- Cryogenic applications

**MECHANICAL PROPERTIES AFTER COLD ROLLING AND FINAL ANNEALING**

- $R_{p0.2}$ > 230 N/mm$^2$
- $R_m$ 540 - 670 N/mm$^2$
- Elongation > 45%
- Hardness < 200 HB

**PHYSICAL PROPERTIES**

At 20°C it has a density of 7.9 kg/dm$^3$ and a specific heat of 500 J/kg·K

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>200</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modulus of elasticity (GPa)</td>
<td>200</td>
<td>194</td>
<td>186</td>
<td>179</td>
<td>172</td>
<td>165</td>
</tr>
<tr>
<td>Mean coefficient of linear expansion between 20°C ($10^{-6}$ x K$^{-1}$) and</td>
<td>-</td>
<td>16</td>
<td>16.5</td>
<td>17</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Thermal conductivity (W/m·K)</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20.5</td>
<td>22</td>
</tr>
<tr>
<td>Electrical resistivity ($\Omega$·mm$^2$)/m</td>
<td>0.73</td>
<td>0.80</td>
<td>1.00</td>
<td>1.15</td>
<td>1.22</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**WELDING**

The recommended consumable electrodes are:

- Shielded electrodes: E 19 9 L
- Wires and rods: G 19 9 L (GMAW), W 19 9 L (GTAW), P 19 9 L (PAW), S 19 9 L (SAW)
- Hollow electrodes: T 19 9 L

**INTERGRANULAR CORROSION**

ACX 150, due to its low carbon content ≤ 0.03%, is more resistant to intergranular corrosion than ACX 120.
PITTING CORROSION

These Cr-Ni stainless steels can be safely used in chloride media with concentrations lower than 200 ppm.

SURFACE CLEANING

Wash the surface with neutral soap and water applied with a cloth or a brush without scratching the stainless steel. Then, always rinse the stainless steel with water to remove completely the cleaning agent. Finally, it is recommended to dry the surface to preserve a good superficial condition. In severe environments, a frequent cleaning is strongly recommended.

SPECIFICATIONS

ACX 150 austenitic stainless steel is included in the main international standards.

This grade can be supplied according to EN, ASTM, ASME, AMS, QQS and MILS standard requirements.

ACX 150 is approved in compliance with:

- PED (Pressure Equipment Directive) according to EN 10028-7 and AD 2000 Merkblatt W2 and W10.
- Lloyd’s Register of Shipping.

ACX 150 complies with the European Directives:

- Hexavalent chromium, ROHS.
- Electrical instruments, ROHS.

CORROSION RESISTANCE

Cr-Ni austenitic stainless steels exhibit high corrosion resistance in a wide range of applications. For instance the ACX 150 has corrosion rates lower than 0.10 mm/year in the following media:

- 20% acetic acid at 80°C.
- 90% formic acid at 20°C.
- 20% phosphoric acid at 60°C.
- 20% nitric acid at 50°C.
- 90% sulphuric acid at 20°C.
- Toluene.
- Milk.
- Beer.
- Juice.
- Wine.