MARTENSITIC STAINLESS STEEL
ACX 390

EN DESIGNATION | ASTM DESIGNATION
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1.4031 | 420
X39Cr13 | S42000

DESCRIPTION
Martensitic stainless steels exhibit an excellent combination of mechanical resistance and hardness by the suitable thermal treatment. Moreover, they are ductile and can be shaped.

CHEMICAL COMPOSITION

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
<th>Cr</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.36-0.42</td>
<td>≤0.75</td>
<td>≤1.00</td>
<td>≤0.040</td>
<td>≤0.015</td>
<td>12.50-14.50</td>
<td>0.06-0.09</td>
</tr>
</tbody>
</table>

APPLICATIONS
- Cutting tools
- High quality knives
- Cutlery

MECHANICAL PROPERTIES AFTER COLD ROLLING AND FINAL ANNEALING

- $R_{p0.2}$ > 275 N/mm$^2$
- $R_m$ max 700 N/mm$^2$
- Elongation min 20%
- Hardness max 235 HB

PHYSICAL PROPERTIES
At 20°C it has a density of 7.7 kg/dm$^3$ and a specific heat of 460 J/kg·K

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>20°C</th>
<th>100°C</th>
<th>200°C</th>
<th>300°C</th>
<th>400°C</th>
<th>500°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modulus of elasticity (GPa)</td>
<td>215</td>
<td>212</td>
<td>205</td>
<td>200</td>
<td>190</td>
<td>-</td>
</tr>
<tr>
<td>Mean coefficient of linear expansion between 20°C ($10^{-6}$ x K$^{-1}$) and</td>
<td>-</td>
<td>10.5</td>
<td>11</td>
<td>11.5</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Thermal conductivity (W/m·K)</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Electrical resistivity (Ω·mm$^2$/m)</td>
<td>0.55</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

WELDING
ACX 390 is not recommended for welding, since its welds would be fragile and with low corrosion resistance.

CLEANING SURFACE
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
It can be delivered according to EN-10088-2 and ASTM A-176 standard requirements. It complies with the European Directives for
- Hexavalent chromium, ROHS.