Electronics
Tweezers
5A High Precision Tweezers

4 1/2" 115 mm
Extra fine tips, superior finish

5A.SA  Anti-Magnetic Anti-Acid Stainless Steel

General Notes
- low carbon austenitic steel (Material number 1.4435, DIN X2CrNiMo18-14-3, AISI number 316L)
- contains from 16.5 to 18.5 wt% chromium and has important quantities of nickel and molybdenum as additional alloying elements
- non-magnetizable
- good corrosion resistance to most chemicals, salts and acids
- generally used where corrosion resistance and toughness are primary requirements
- typical applications include tweezers for the electronic industry, watch-makers, jewelers and laboratory and medical applications in moderately aggressive chemical environments

Composition
<table>
<thead>
<tr>
<th>Component</th>
<th>Wt.%</th>
<th>Component</th>
<th>Wt.%</th>
<th>Component</th>
<th>Wt.%</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>≤0.03</td>
<td>Si</td>
<td>≤1.0</td>
<td>Mn</td>
<td>≤2.0</td>
</tr>
<tr>
<td>P</td>
<td>≤0.045</td>
<td>S</td>
<td>≤0.03</td>
<td>Cr</td>
<td>17.0-19.0</td>
</tr>
<tr>
<td>Mo</td>
<td>2.5-3.0</td>
<td>Ni</td>
<td>12.5-15.0</td>
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</tr>
</tbody>
</table>

**Mechanical properties:**

- **State**: annealed
- **Density**: 8.0 g/cm³
- **Hardness HB30**: ≤215
- **Hardness Rockwell B**: 79
- **Tensile strength, ultimate**: 500-700 MPa
- **Tensile strength, yield**: 290
- **0.2% Yield stress**: ≤200 MPa
- **Elongation, break**: 40%
- **Modulus of elasticity**: 200 GPa

**Thermal properties**

- **Coeff. of lin. therm expansion**: $16.0 \times 10^{-6}/°C$ 20°C-100°C
- **Coeff. of lin. therm expansion**: $17.0 \times 10^{-6}/°C$ 20°C-300°C
- **Specific heat capacity**: 0.50 J/(g·K)
- **Thermal conductivity**: 15W/(m·K)
- **Continuous use temperature**: 350°C
- **Max service temperature, ait**: 925°C

**Electrical properties**

- **Resistivity**: 0.75 E-4 Ohm.cm

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Credits