CuNi44

This copper-nickel resistance alloy, also known as constantan, is characterized by a high electrical resistance coupled with a fairly small temperature coefficient of the resistance. This alloy also shows high tensile strength and resistance towards corrosion. It can be used at temperatures of up to 600°C in air.

**COMPOSITION OF MATERIAL**
- Ni: 43 - 45%
- Cu: balance
- Mn: ≤ 1.2%

**PHYSICAL PROPERTIES**
- Density: 8.9 g/cm³
- Melting point: 1230 - 1290 °C
- Electrical conductivity: 2 m/Ω mm² (at 20 °C R330)
- Electrical resistivity: 0.49 Ω mm²/m (at 20 °C R330)
- Temperature coefficient of electrical resistance: -80 to +40·10⁻⁶/K (at 20 to 105 °C R330)
- Thermal conductivity: 23 W/K m (at 20 °C)
- Thermal capacity: 0.411 J/g K (at 20 °C)
- Coefficient of thermal expansion (linear): 14.5·10⁻⁶/K (at 20 to 300 °C)
- Modulus of elasticity (tensile): 16.5 GPa (at 20 °C R330)

**MANUFACTURING PROGRAM**

<table>
<thead>
<tr>
<th>Rolls, spools, sheets</th>
<th>THICKNESS</th>
<th>WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 - 0.15 mm</td>
<td>1 - 640 mm</td>
<td></td>
</tr>
</tbody>
</table>

*not all combinations of thickness and width are available*

**TYPICAL TEMPER VALUES (information only)**

<table>
<thead>
<tr>
<th></th>
<th>Tensile strength Rm in MPa</th>
<th>Yield strength Rpo.2 in MPa</th>
<th>Elongation in % L0 = 100 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>R330</td>
<td>≥ 550</td>
<td>&lt; 450</td>
<td>&gt; 10</td>
</tr>
<tr>
<td>R560</td>
<td>≥ 560</td>
<td>&gt; 450</td>
<td>&lt; 3</td>
</tr>
</tbody>
</table>

*The values in the table are valid only for foils with thickness > 0.1 mm.*

For further information please visit our website: [https://www.schlenk.com](https://www.schlenk.com)