Wieland-K16
Cu-ETP1/CW003A

Material designation
EN Cu-ETP1/CW003A
UNS –

Chemical composition*
Cu + O ≥ 99.99 %
with oxygen not desoxidized ≤ 140ppm
*Reference values in % by weight

Physical properties*
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical conductivity</td>
<td>≥58 MS/m</td>
</tr>
<tr>
<td>%IACS</td>
<td>≥100</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>&gt;385 W/(m·K)</td>
</tr>
<tr>
<td>Thermal expansion coefficient (0–300 °C)</td>
<td>10⁻⁶/K 17.7</td>
</tr>
<tr>
<td>Density</td>
<td>8.93 g/cm³</td>
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<tr>
<td>Modulus of elasticity</td>
<td>127 GPa</td>
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</tbody>
</table>
*Reference values at room temperature

Material properties and typical applications
Wieland-K16 is a copper with a low oxygen content. It exhibits good electrical and thermal conductivity. Due to the oxygen content its use at an elevated temperature in a reducing atmosphere is critical, especially if a hydrogen-containing atmosphere (hydrogen embrittlement) is concerned. This means there are certain restrictions during annealing as well as welding and soldering. Main applications are within the superconductor technology.

This material is more pure than C11000. RRR values (293K/4,2K) > 300 can be achieved.

Corrosion resistance
Pure copper and high-copper alloys generally exhibit good corrosion resistance due to their inert character and are practically insensitive to stress corrosion cracking.

Joining
- Resistance welding: good
- Inert gas shielded arc welding: fair
- Hard soldering: good
- Soft soldering: excellent

Types of delivery
The BU Extruded Products supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties
- Machinability: 20 %
- Capacity for being cold worked: excellent
- Capacity for being hot worked: fair

Surface treatment
- Polishing: mechanical electrolytic, good
- Electroplating: excellent

Heat treatment
- Melting range: 1083 °C
- Hot working: 750–900 °C
- Soft annealing: 250–500 °C 1–3 h
- Thermal stress relieving: 150–200 °C 1–3 h

Product standards
- Wire EN 13602
- Section

Handelsmarken
Further information is provided in the brochure on RESISTAN.