Wieland-GB1
CuSn12Ni2-C-GC | Cast bronze

Material designation
- EN: CuSn12Ni2-C-GC
- UNS: CC484K

Chemical composition*
- Cu: 85%
- Sn: 12%
- Ni: 2%

*Reference values in % by weight

Physical properties*
- Electrical conductivity: 6 MS/m
- %IACS: 10
- Thermal conductivity: 50 W/(m·K)
- Thermal expansion coefficient (0–300 °C): 17.9·10^-6/K
- Density: 8.9 g/cm³
- Modulus of elasticity: 100 GPa

*Reference values at room temperature

Material properties and typical applications
Wieland-GB1 is a very wear-resistant, tough-hard and corrosion-resistant material. It is mainly used in worm and spiral gears, fittings and pump castings, couplings, nuts subjected to high loads and in construction elements subjected to cavitation.

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
- Forming: 70 %
- Machinability (CuZn39Pb3 = 100 %): 70 %
- Capacity for being cold worked: not possible
- Capacity for being hot worked: not possible

Heat treatment
- Melting range: 830–1010 °C
- Thermal stress relieving: 250–400 °C, 1–3 h

Corrosion resistance
Cast alloys belong to the most corrosion-resistant copper alloys. They exhibit excellent resistance to atmospheric influences, carboxonic acid and saline water. Also important is their resistance to seawater and their insensitivity to stress corrosion cracking.

Mechanical properties, reference values

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<thead>
<tr>
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<th>Tensile strength Rm MPa</th>
<th>Yield strength ReL MPa</th>
<th>Elongation A %</th>
<th>Hardness HBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous casting</td>
<td>300</td>
<td>180</td>
<td>10</td>
<td>95</td>
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</table>

Product standards
- Cast calloys: EN 1982