## Bronze (Copper-Tin)
### BB95
#### Ecobronze

<table>
<thead>
<tr>
<th>Material Designation</th>
<th>Nominal Composition (mass content in %)</th>
<th>About The Alloy</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN-EN Symbol</td>
<td>Cu Balance</td>
<td>The Ecobronze BB95 is an advanced 10% tin bronze alloy to cope with the requirements of miniaturisation. BB95 is distinguished by a very good combination of strength and electrical conductivity. It is used for connectors and current-carrying springs in contacts.</td>
</tr>
<tr>
<td>DIN-EN</td>
<td>Sn 10</td>
<td>Among the 4 to 10% tin bronze alloys BB95 exhibits the lowest electrical conductivity; but the highest reachable strength is significantly higher than for BB40, BB50, BB60 and BB80. By means of an additional tempering after the cold forming process the bendability can be further improved.</td>
</tr>
<tr>
<td>UNS</td>
<td>Zn &lt; 0.2</td>
<td>The alloy is registered with the U.S. EPA as Antimicrobial and with respect to Pb and Cd meets the OEKO-TEX Standard 100.</td>
</tr>
<tr>
<td>JIS</td>
<td>Ni &lt; 0.2</td>
<td></td>
</tr>
<tr>
<td>The Miller Company</td>
<td>Fe &lt; 0.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pb &lt; 0.005</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P 0.03 - 0.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other &lt; 0.1</td>
<td></td>
</tr>
</tbody>
</table>

### Nominal Composition

- **Cu**: Balance
- **Sn**: 10
- **Zn**: < 0.2
- **Ni**: < 0.2
- **Fe**: < 0.1
- **Pb**: < 0.005
- **P**: 0.03 - 0.35
- **Other**: < 0.1

### About The Alloy

- **Electrical conductivity**: 6 MS/m
- **Thermal conductivity**: 50 W/(m·K)
- **Thermal expansion coefficient**: 18.4 10⁻⁶/K
- **Density**: 8.8 g/cm³
- **Modulus of Elasticity**: 110 GPa

### Physical Properties

- **Electrical conductivity**: soft
- **Thermal conductivity**: 50 W/(m·K)
- **Thermal expansion coefficient**: 18.4 10⁻⁶/K
- **Density**: 8.8 g/cm³
- **Modulus of Elasticity**: 110 GPa

### Mechanical Properties

<table>
<thead>
<tr>
<th>Temper condition</th>
<th>H04 R 650 H 200</th>
<th>H06 R 750 H 230</th>
<th>H08 R 850 H 240</th>
<th>H10 R 950 H 270</th>
<th>H12 R 1000 H 290</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength in N/mm²</td>
<td>650 - 750</td>
<td>750 - 850</td>
<td>850 - 950</td>
<td>950 - 1050</td>
<td>&gt; 1000</td>
</tr>
<tr>
<td>0.2 % yield Strength in N/mm²</td>
<td>&gt; 580</td>
<td>&gt; 650</td>
<td>&gt; 780</td>
<td>&gt; 900</td>
<td>&gt; 950</td>
</tr>
<tr>
<td>Elongation A₅₀ %</td>
<td>&gt; 11</td>
<td>&gt; 9</td>
<td>&gt; 5</td>
<td>&gt; 1</td>
<td>-</td>
</tr>
<tr>
<td>Vickers hardness HV</td>
<td>200 - 240</td>
<td>230 - 270</td>
<td>250 - 290</td>
<td>270 - 310</td>
<td>&gt; 290</td>
</tr>
<tr>
<td>Electrical conductivity in % IACS</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

### Typical Applications

- Connectors for electrical engineering, electronics and automotive technology
- Stamped-bent parts
- Contact springs
- Leaf springs for relays
- Slide bearings
- Slide bars

### Minimum radius of the bending mandrel for 90° bend and strip thickness s, tempered quality

| 0.10 ≤ s ≤ 0.25 mm | transverse parallel | 0 x s | 0 x s | 1 x s | 2.5 x s | - | - |

*) Reference values

*Reference values at room temperature
**Between 20 and 300 °C
Bronze (Copper-Tin)  
**BB95**  
Ecobronze

### Processing Instructions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold forming properties</td>
<td>very good</td>
</tr>
<tr>
<td>Machinability</td>
<td>sufficient</td>
</tr>
<tr>
<td>Electroplating properties</td>
<td>very good</td>
</tr>
<tr>
<td>Hot-dip tinning properties</td>
<td>very good</td>
</tr>
<tr>
<td>Soldering</td>
<td>very good</td>
</tr>
<tr>
<td>Resistance welding</td>
<td>good</td>
</tr>
<tr>
<td>Gas shielded arc welding</td>
<td>good</td>
</tr>
<tr>
<td>Laser welding</td>
<td>very good</td>
</tr>
</tbody>
</table>

### Available Dimensions

- Bright pre-rolled strips 1 to 2.5 mm
- Precision strip thickness from 0.05 to 1.2 mm
- Strip width from 3.0 to 600 mm, but at least 10 times of the strip thickness
- Other widths available on request.

### Available Versions

- Coils with standard outer diameters of 1200 mm
- Strips in reel form with coil weight of up to 1500 kg
- Multipancake up to 2.5 t
- Hot-dip tinned strips
- Profiled strips
- Electroplated strips (tin, nickel)

### Your Local Contact Person

<table>
<thead>
<tr>
<th>Region</th>
<th>Contact Person</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>Sundwiger Messingwerk GmbH &amp; Co. KG</td>
<td>Hönnetalstraße 110, 58675 Hemer, Germany</td>
<td>+49 2372 661-100</td>
<td>+49 2372 661-260</td>
<td><a href="mailto:michael.koehler@diehl.com">michael.koehler@diehl.com</a></td>
<td><a href="http://www.diehl.com/metall">www.diehl.com/metall</a></td>
</tr>
<tr>
<td>USA</td>
<td>The Miller Company</td>
<td>275 Pratt Street, CT 06450 Meriden, USA</td>
<td>+1 203 63969-02</td>
<td>+1 203 63969-24</td>
<td><a href="mailto:sales@themillerco.com">sales@themillerco.com</a></td>
<td><a href="http://www.diehl.com/metall">www.diehl.com/metall</a></td>
</tr>
<tr>
<td>Asia</td>
<td>Diehl Metall (Shenzhen) Co. Ltd.</td>
<td>Block 25, Shatoujiao Free Trade Zone, 518081 Shenzhen, P.R. China</td>
<td>+86 755 25261454-0</td>
<td>+86 755 25260974</td>
<td><a href="mailto:info@diehlmetall.com.cn">info@diehlmetall.com.cn</a></td>
<td><a href="http://www.diehl.com/metall">www.diehl.com/metall</a></td>
</tr>
</tbody>
</table>

**Processing Instructions**

- Cold forming properties: very good
- Machinability: sufficient
- Electroplating properties: very good
- Hot-dip tinning properties: very good
- Soldering: very good
- Resistance welding: good
- Gas shielded arc welding: good
- Laser welding: very good

**Available Dimensions**

- Bright pre-rolled strips 1 to 2.5 mm
- Precision strip thickness from 0.05 to 1.2 mm
- Strip width from 3.0 to 600 mm, but at least 10 times of the strip thickness
- Other widths available on request.

**Available Versions**

- Coils with standard outer diameters of 1200 mm
- Strips in reel form with coil weight of up to 1500 kg
- Multipancake up to 2.5 t
- Hot-dip tinned strips
- Profiled strips
- Electroplated strips (tin, nickel)

**Your Local Contact Person**

- Europe: Sundwiger Messingwerk GmbH & Co. KG  
  Hönnetalstraße 110, 58675 Hemer, Germany  
  Phone +49 2372 661-100  
  Fax +49 2372 661-260  
  E-Mail: michael.koehler@diehl.com  
  www.diehl.com/metall

- USA: The Miller Company  
  275 Pratt Street, CT 06450 Meriden, USA  
  Phone +1 203 63969-02  
  Fax +1 203 63969-24  
  E-Mail: sales@themillerco.com  
  www.diehl.com/metall

- Asia: Diehl Metall (Shenzhen) Co. Ltd.  
  Block 25, Shatoujiao Free Trade Zone, 518081 Shenzhen, P.R. China  
  Phone +86 755 25261454-0  
  Fax +86 755 25260974  
  E-Mail: info@diehlmetall.com.cn  
  www.diehl.com/metall

---

The information given in this material data sheet, which in any case provides no guarantee of particular characteristics, has been compiled to the best of our knowledge but is given without any obligation on our part. Our liability is determined solely by the individual contract terms, in particular by our general conditions of sale. We reserve the right to make alterations especially where necessitated by technical developments or changes in availability. Please ask for the latest edition of this material data sheet.