PB102
PHOSPHOR BRONZE ALLOY

PRODUCT DESCRIPTION
Due to its ability to be used in a broad range of general purpose applications, PB102 is the most common wrought phosphor bronze grade currently used in the UK. The spring qualities of the alloy are superb due to the tin content used in the alloying process. Offering good mechanical and excellent cold forming properties, PB102 benefits from high corrosion resistance in a wide range of atmospheric conditions, coming close to the performance of aluminium bronzes.

KEY FEATURES
- Good spring properties
- High mechanical properties
- Low magnetic permeability
- Very good corrosion resistance
- Excellent cold forming properties

APPLICATIONS
- Pump and valve spindles, shafts and springs
- Connectors and switches, electronic components
- Bushes and bearings

CHEMICAL COMPOSITION (weight %)

<table>
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<tr>
<th></th>
<th>Cu</th>
<th>Sn</th>
<th>P</th>
<th>Zn</th>
<th>Ni</th>
<th>Fe</th>
<th>Pb</th>
<th>Total Impurities</th>
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<tbody>
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<td>Min</td>
<td>Bal</td>
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<td>0.01</td>
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<tr>
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<td>Bal</td>
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<td>0.40</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.02</td>
<td>0.2</td>
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</table>

MECHANICAL PROPERTIES *
- Proof Stress: 560 MPa
- Tensile Strength: 650 MPa
- Elongation A50 mm: 3 to 40%
- Hardness Vickers: 75 to 230 HV

PHYSICAL PROPERTIES
- Density: 8.85 g/cm³
- Melting Point: 930 °C
- Modulus of Elasticity: 121 GPa
- Thermal Conductivity: 63 W/m.K
- Electrical Resistivity: 0.096 x10⁻⁶ Ω.m

* Mechanical values are variable depending on the condition of the material i.e. 1/2 hard, 1/4 hard etc. Mechanical values for bar are a typical average.

AVAILABILITY
Round bar, hexagon

MATERIAL SPECIFICATIONS
PB102 | CW451K | CuSn5 | DEF STAN 02-838

MACHINABILITY
Good

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