

# 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



### AVAILABILITY

Round bar, hexagon

### MATERIAL SPECIFICATIONS

PB102 | CW451K | CuSn5 | DEF STAN 02-838

### MACHINABILITY

Good

### CHEMICAL COMPOSITION (weight %)

	Cu	Sn	P	Zn	Ni	Fe	Pb	Total Impurities
Min	Bal	4.5	0.01					
Max	Bal	5.5	0.40	0.2	0.2	0.1	0.02	0.2

### 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/cm <sup>3</sup>
Melting Point	930 °C
Modulus of Elasticity	121 GPa
Thermal Conductivity	63 W/m.K
Electrical Resistivity	0.096 x10 <sup>-6</sup> 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.