

eco BS4®

CuSn5NiPS | lead-free phosphor bronze

Material designation

EN	not standardized
UNS	not standardized

Chemical composition¹

Cu	Rest
Sn	5 %
Ni	0,6 %
P	0,3 %
S	0,3 %
Pb	max. 0,09 %

¹Reference values in % by weight

Physical properties²

Electrical conductivity	MS/m %IACS	8,5 14,7
Thermal conductivity	W/(m·K)	82,1
Thermal expansion coefficient (0-300°C)	10 ⁻⁶ /K	19
Density	g/cm ³	8,8
Modulus of elasticity	GPa	119

²Reference values at room temperature

Corrosion resistance³

Bronze alloys are known to have excellent resistance to corrosion in seawater, industrial atmosphere and to stress corrosion cracking.

³Reference values

Material properties and typical applications

eco BS4® is a lead-free phosphor bronze, that has high strength with corresponding spring properties. The wear and corrosion resistance are very good. This phosphor bronze has good cold working capacity. Special application fields are springy electronic-contacta and bearings (plain bearings or valve parts). In the size range between 2 and 4 mm very high mechanical strength values can be achieved.

The mechanical properties are comparable to those of CuSn4Pb4Zn4 - CW456K.

This alloy is lead-free according to RoHS and ELV.

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

Machinability (CuZn39Pb3 = 100 %) 70 %

Capacity for being cold worked good

Capacity for being hot worked poor

Joining

Resistance welding (butt weld) good

Inert gas shielded arc welding fair

Gas welding poor

Hard soldering good

Soft soldering good

Surface treatment⁴

Polishing

mechanical electrolytic good fair

Electroplating good

⁴for further fabrication properties, please call your contact person.

Heat treatment

Melting range –

Soft annealing 550 – 650 °C 2 – 3 h

Thermal stress relieving 200 – 250 °C 1 – 2 h

Product standards

Rod	not standardized
Wire	not standardized
Profile	not standardized
Hollow rod	not standardized
Tube	not standardized

Trademarks

wieland ecoline