

Wieland-G22

CuSn7Pb15-C-GC | Lead bronze

Material designation

EN CuSn7Pb15-C-GC
CC496K

UNS –

Chemical composition*

Cu 77.5 %

Pb 15 %

Sn 7 %

Ni 0.8 %

*Reference values in % by weight

Physical properties*

Electrical conductivity MS/m 7
%IACS 12

Thermal conductivity W/(m·K) 59

Thermal expansion coefficient (0–300 °C) 10⁻⁶/K 18.8

Density g/cm³ 9.2

Modulus of elasticity GPa 82

*Reference values at room temperature

Material properties and typical applications

Wieland-G22 is the standard alloy among cast copper-lead-tin alloys that has excellent emergency running properties and is largely insensitive to edge pressure. It is used for main spindles in machine tools, as for this application no surface hardened spindles are employed. It is widely used in textile machinery and pump construction. Especially in pump construction, Wieland-G22 is suitable for „water lubrication“.

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 90 %
(CuZn39Pb3 = 100 %)

Capacity for being cold worked not possible

Capacity for being hot worked not possible

Heat treatment

Melting range 905 °C

Thermal stress relieving 400–600 °C

Corrosion resistance

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

Mechanical properties, reference values

| | Tensile strength R _m MPa | Yield strength R _{p0.2} MPa | Elongation A % | Hardness HBW |
|--------------------|---|--|----------------------|-----------------|
| Continuous casting | 200 | 90 | 7 | 65 |

Product standards

Cast calloys EN 1982