

Data sheet

Phosphor bronze ball

Phosphor bronze balls have good mechanical and electrical properties and good corrosion and wear resistance.

Fields of application

special valves and pumps, special bearings, check valves, electrical conductors

Corrosion resistance

Strength in contact with water, steam, gasoline and mineral oils, unresistant to acids and alkalis. Lower corrosion resistance than bronze-aluminum alloys.

Material

Name	Alternative name / CEN	Other names / UK
CuSn5	CW451K	PB 102
CuSn6	CW452K	PB 103
CuSn8	CW453K	PB 104

Chemical composition in %

P	Sn	Zn	Pb	Fe	Cu
0,030 - 0,35	4,20 - 5,80	≤ 0,30	≤ 0,05	≤ 0,10	Balance
0,030 - 0,35	5,00 - 7,00	≤ 0,30	≤ 0,05	≤ 0,10	Balance
0,030 - 0,35	7,00 - 9,00	≤ 0,20	≤ 0,05	≤ 0,10	Balance

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	ME	Typ	Anm.	Werte
Density	δ	g/cm ³	Physical	Environmental temp.	8,92
Modulus of elasticity	E	GPa	Mechanical		116
Specific heat	C	J/kg*K	Thermal	Environmental temp.	380
Linear coefficient of thermal expansion	α	10 ⁻⁶ /°C	Thermal	($\Delta T = 0 - 100$ °C)	18,2
Thermal conductivity	λ	W/(m*K)	Thermal	Environmental temp.	65,8
Electrical resistivity	P	Ω *m*10 ⁻⁹	Elektrical	-	115
Relative magnetic permeability	μ	-	Magnetical	Paramagnetic	1,20

Technical characteristics

Characteristic	Type	Unit	Type	Unit	Value
Hardness	Mechanical	HRB	75 - 105	-	-
Break load in traction	Mechanical	MPa	600 - 700	-	-
Operating temperature	Thermal	°C	-196 - 400	°F	-320,8 - 752

Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,500 – 180,000	1/16 - 7	G 100 / 200 / 500 / 1000 / 2000