

Edition from	15.05.2020	Alloy data sheet	No. 720
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Alloy	ISO	EN	ASTM
BZ4	CuSn4Pb4Zn4	CW456K	C54400

Others:

- JIS C5441

Main characteristics

Phosphor bronze exhibiting very high tensile strength.
Excellent free machining quality.
Especially recommended for the manufacture of spring contacts.

Chemical Composition

	Cu Remainder	Sn 3,5 – 4,5 %	Zn 3,5 – 4,5 %	Pb 3,5 – 4,0 %	P 0,01 – 0,40 %
Impurities Max.	Ni 0,2 %	Fe 0,1 %	Te 0,2 %	Others 0,2 %	

Product portfolio

Hot extruded and cold drawn products

Section type Round, square, hexagonal, flat

Rod Available

Wire Available

Profile On demand

Examples of use

Electrical components and equipment: spring contacts and any part at risk of stress corrosion cracking.
Industrial machinery: security locks components.

Mechanical properties

Form	Temper	Dimension Ø, SW	UTS N/mm ²	YS N/mm ²	A %	Hardness
Rods Wires (max. 6,35 mm)	EN 12164					
	R450	2.0 – 12.0	> 450	350	> 6	HB 150
	R550	2.0 – 6.0	> 550	500	> 3	HB 180
	R640	2.0 – 4.0	> 640	580	-	HB 200
	R720	2.0 – 4.0	> 720	680	-	HB 210
	ASTM B139					
	H04	1.6 – 6.0	> 450	-	> 8	-
		6.0 – 12.0	> 415	-	> 10	-
		12.0 – 15.0	> 380	-	> 12	-

Other tempers on demand

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Physical properties	Density	kg/dm ³	8,8
	Melting range	°C	940 – 1065
	Linear expansion coefficient (20-200°C)		0,000017
	Specific heat	J/kg K	380
	Thermal conductivity at 20°C (68° F)	W/m · K	80
	Electrical conductivity at 20° C (68° F)	% IACS	> 19
	Elasticity modulus	kN/mm ²	118

Workability	Cold working, maximum section reduction	%	good, 80
	Hot working, temperature range	°C	not recommended
	Machining, compared with CuZn39Pb3 (100 %)	%	excellent, 90
	Annealing temperatures	°C	480 - 600
	Stress relieving temperatures	°C	200 - 250
	Soft soldering		good
	Hard soldering		medium
	Autogenous welding		medium
	Arc welding		medium
Resistance welding		medium	

Symbols	Ø	= round rod diameter (mm)
	SW	= width across flats (hexagonal or square rods) (mm)
	UTS	= ultimate tensile strength
	YS	= yield stress at 0,2 %
	A	= tensile elongation