

## Tin Bronze

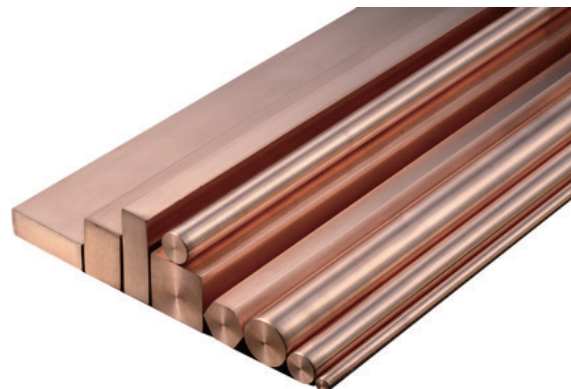
# bedra 52100

### Material Designation \*

UNS	C52100
EN	CuSn8 (CW 453 K)
JIS	C5210
GB	QSn8-0.3

### Chemical Composition

Cu	Balance	%
Sn	7.0-9.0	%
P	0.03-0.35	%



### Characteristics

It has good elasticity, ductility, fatigue resistance and corrosion resistance.

### Typical Applications

It is applied for metal fasteners, springs and switch parts under worse conditions than C51000.

### Physical Properties

Density <sup>①</sup>	8.8	g/cm <sup>3</sup>
Electrical conductivity <sup>①</sup>	13	%IACS
Thermal conductivity <sup>①</sup>	67	W/(m·K)
Coefficient of thermal expansion <sup>②</sup>	18.5	10 <sup>-6</sup> /K
Modulus of elasticity	115	GPa

Note①: Temperature for testing is 20°C.

Note②: Temperature range for testing is 20-300°C.

### Fabrication Properties

Cold workability	Good
Hot workability	Poor
Brazing	Excellent
Machinability Compared with C36000	20%

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## Mechanical Properties

Diameter	Temper	Tensile Strength	Yield Strength	Elongation
mm		MPa	MPa min.	
0.1 < Φ ≤ 1.0	H02	540-740	370	--
1.0 < Φ ≤ 2.0	H02	520-720	350	--
2.0 < Φ ≤ 4.0	H02	500-700	330	≥4
4.0 < Φ ≤ 6.0	H02	480-680	310	≥8
6.0 < Φ ≤ 8.5	H02	460-660	290	≥10
0.1 < Φ ≤ 1.0	H04	880-1130	700	
1.0 < Φ ≤ 2.0	H04	860-1060	680	--
2.0 < Φ ≤ 4.0	H04	830-1030	650	--
4.0 < Φ ≤ 6.0	H04	780-980	600	--
6.0 < Φ ≤ 8.5	H04	690-950	510	--

## Tolerance and Delivery Form

### Straight Bar

Diameter	Tolerance <sup>③</sup>	Ovality	Length		Straightness
mm	mm	mm	mm max.	ft max.	mm/m max.
2 ≤ Φ < 3	0.03	0.0075	2500	8.2	1.0
3 ≤ Φ < 6	0.04	0.01	2500	8.2	0.5
6 ≤ Φ < 10	0.06	0.015	4000	13.1	0.5
10 ≤ Φ < 18	0.08	0.02	4000	13.1	0.5
18 ≤ Φ < 25	0.12	0.03	4000	13.1	0.5
25 ≤ Φ < 40	0.20	0.05	4000	13.1	0.5
40 ≤ Φ < 60	0.30	0.075	4000	13.1	0.5
60 ≤ Φ < 80	0.60	0.15	3000	9.8	3.0
80 ≤ Φ < 100	1.60	0.40	2000	6.6	5.0
100 ≤ Φ ≤ 120	2.00	0.50	1500	4.9	6.0

Note<sup>③</sup>: The tolerances listed in the table are specified as all plus or all minus. When tolerances are specified as plus and minus (±), half the values given.

\*Composition UNS  
 Conductivity UNS  
 Mechanical Properties For reference only, measured at room temperature, 68°F(20°C).  
 Fabrication Properties UNS, Machinability for reference only.  
 Other Physical Properties For reference only

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