

## boway 51100

### Material Designation

Boway designation	boway 51100
UNS	C51100
EN	CuSn4
JIS	C5111
GB(China)	QSn4-0.3

### Chemical Composition\*

Sn	4	%
Cu	Rem.	

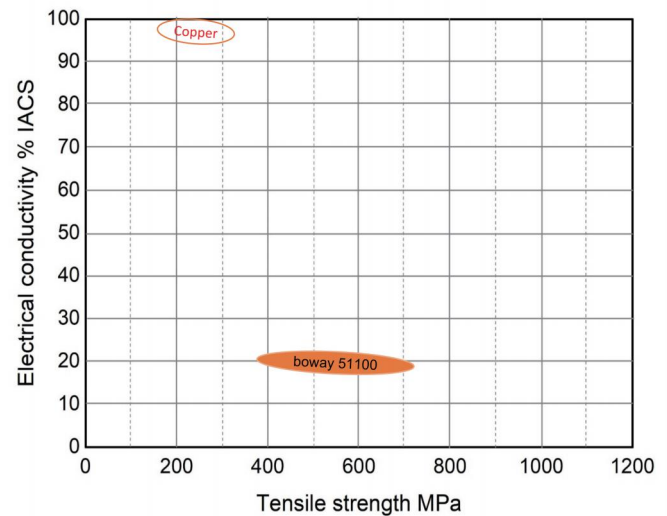
\* Nominal composition

### Application Target

Signal Connector	Suitable
Power Connector	Not Suitable
Miniaturized Connector	Suitable
Switch / Relay	Suitable
Semiconductor	Not recommend

### Fabrication Properties

Cold forming	Very good
Machining	Not suitable
Electroplating	Very good
Hot dip tinning	Very good
Laser welding	Good
Resistance welding	Good
Soft soldering	Very good



### Characteristics

Excellent formability and medium/high strength combined with low sensitivity against stress corrosion cracking.  
Very good corrosion resistance as well as excellent solderability.

### Physical Properties\*

Density	8.8	g/cm <sup>3</sup>
Electrical conductivity @ 20°C	19	% IACS
	11	MS/m
Thermal conductivity @ 20°C	100	W/(m·K)
Specific heat capacity	0.377	J/(g·K)
Modulus of elasticity	120	GPa
Poisson's ratio	0.33	
Coefficient of thermal expansion**	17.8	10 <sup>-6</sup> /K

\* Typical values at room temperature for reference.

\*\* average value between 20-300°C

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### Mechanical Properties

Temper	Tensile strength		Yield strength	Hardness*	Elongation
	MPa	ksi			
R380(1/2H)	380 - 485	55 - 70	≥ 290	110 - 160	≥ 12
R460(3/4H)	460 - 565	67 - 82	≥ 440	150 - 190	≥ 6
R495(H)	495 - 600	72 - 87	≥ 485	160 - 200	≥ 2
R580(EH)	580 - 685	84 - 99	≥ 560	190 - 230	≥ 1
R625(SH)	625 - 725	91 - 105	≥ 605	200 - 240	≥ 1

\*For reference only

### Bendability bending thickness: ≤ 0.5 mm, bending width: 10 mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R380(1/2H)	0	0	0	0
R460(3/4H)	0	0	0	1
R495(H)	0	0.5	0	1.5
R580(EH)	0.5	1.5	1	2
R625(SH)	1.5	2.5	2	3.5

90° bend test According to EN ISO 7438, 180° bend test acc. to ASTM B820, shown values might show orange- peel, however no crack.

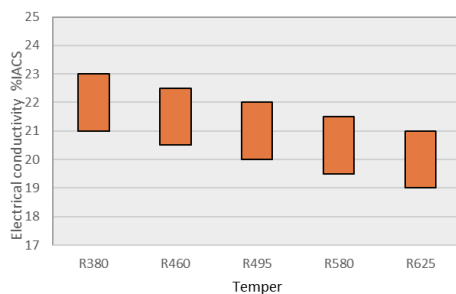
### Packaging

Standard coils with outside diameter up to 1300 mm,  
Traverse-wound coils with drum weight up to 500 kg.  
Multiple-coil up to 3 tons.

### Dimensions available

Strip thickness 0.08 - 3.0 mm, other gauges on request.  
Strip width from 8.5 mm.  
Electroplated and Hot-dip tinned strip available

### Electrical Conductivity



### Fatigue Strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10.000.000 load cycles under symmetrical alternate load without breaking. It depends on the temper selected and can be estimated typically by 1/3 of tensile strength. For solid solution fine grain materials fatigue strength might increase up to 0,5 \* of tensile strength.