

## boway 42500

### Material Designation

Boway designation	boway 42500
USN	C42500
EN	CuSn3Zn9
JIS	—
GB(China)	HSn88-2

### Chemical Composition\*

Cu	88	%
Sn	3	%
Zn	Rem.	

\* Nominal composition

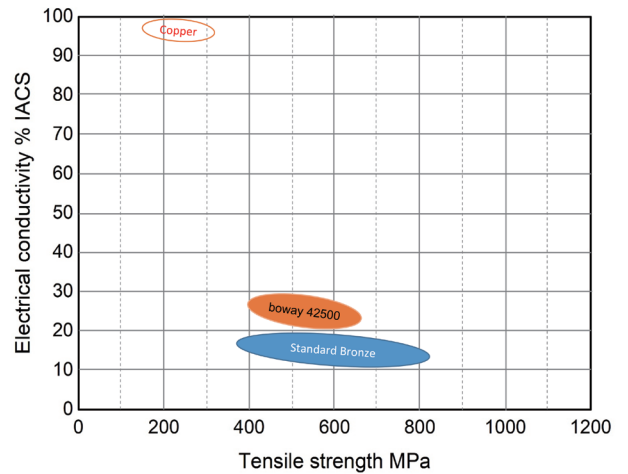
### Application Target

Signal Connector	Very suitable
Power Connector	Suitable
Miniaturized Connector	Not recommend
Switch / Relay:	Suitable
Semiconductor:	Not recommend

Ideal for automotive, industrial connectors, spring.

### Fabrication Properties

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



### Characteristics

Medium conductivity, comparable strength with bronze, excellent fatigue performance and good wear resistance. Resistant to atmospheric and seawater corrosion, insensitive to stress corrosion cracking.

### Physical Properties\*

Density	8.75	g/cm <sup>3</sup>
Electrical conductivity @ 20°C	28	% IACS
conductivity @ 20°C	16	MS/m
Thermal conductivity @20°C	120	W/(m·K)
Specific heat capacity	0.38	J/(g·K)
Modulus of elasticity	115	GPa
Poisson's ratio	0.34	
Coefficient of thermal expansion**	18.4	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			
R395(1/2H)	395-485	57-70	355-465	110-150	≥18
R430(3/4H)	430-510	62-73	400-490	130-170	≥12
R485(H)	485-565	70-81	455-545	160-180	≥9
R525(EH)	525-605	76-87	495-585	170-190	≥7
R580(SH)	580-650	84-94	550-630	180-200	≥3
R635(ESH)	≥635	≥92	≥600	≥200	—

\*For reference only

### Bendability Bending Thickness: ≤0.5 mm , bending width: 10mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R395(1/2H)	0	0	0	0
R430(3/4H)	0	0	0	0
R485(H)	0	0.5	0.5	1
R525(EH)	0.5	1	1	1.5
R580(SH)	1.5	2.5	2	3
R635(ESH)	—	—	—	—

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

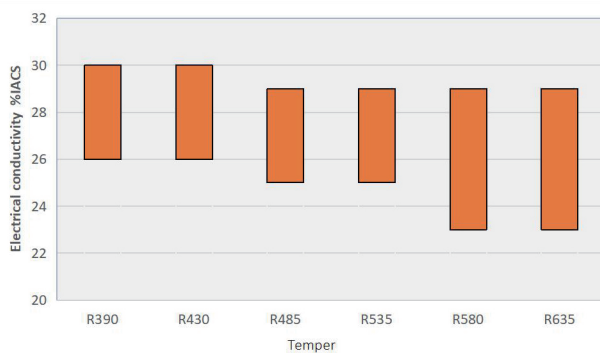
### Packaging

Standard coils with outside diameter up to 1200 mm.,  
 Traverse-wound coils with drum weight up to 500 kg.  
 Multiple-coil up to 3 tons.

### Dimensions available

Strip thickness 0.1 - 2mm, 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.

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