

## boway 19000

### Material Designation

Boway Designation	boway 19000
UNS	C19000
EN	CuNi1P
JIS	-
GB(China)	-

### Chemical Composition\*

Ni	1.1	%
P	0.25	%
Cu	Rem.	

\* Nominal composition

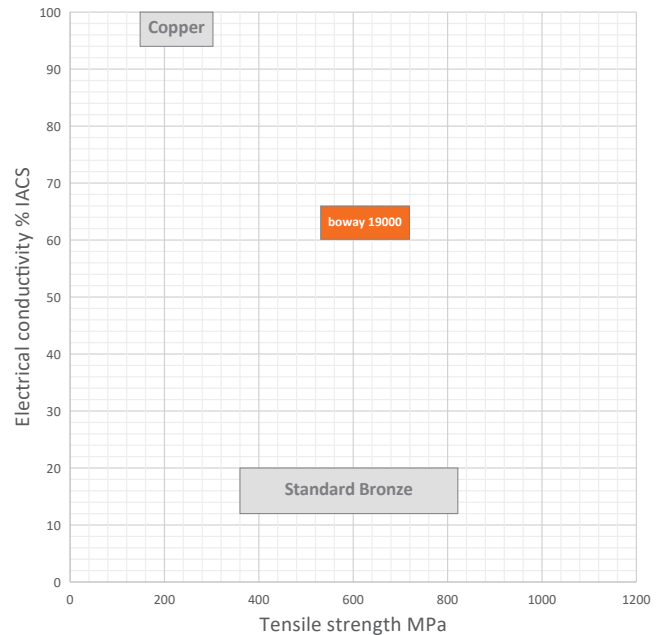
### Application Target

Signal connector	Suitable
Power connector	Suitable
Miniaturized connector	Suitable
Switch/Relay	Suitable
Semiconductor	Not recommended

Well suited for USB Type-C, particularly for 5G vapor chamber, relay spring and others.

### Fabrication Properties

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



### Characteristics

Superb combination of high conductivity and relatively high strength. Excellent stress relaxation resistance and bending performance. Good corrosion resistance.

### Physical Properties\*

Density	8.88	g/cm <sup>3</sup>
Electrical conductivity@20° C	64	% IACS
Thermal conductivity@20° C	37	MS/m
Specific heat capacity	253	W/(m·K)
Modulus of elasticity	0.385	J/(g·K)
Poisson's ratio	130	GPa
Coefficient of thermal expansion**	0.33	
	17.6	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	Elongation	Hardness*
	MPa	ksi			
R350(TB00)	≤ 350	≤ 51	≤ 200	≥ 20	≤ 100
R530(TR04)	530–620	76–90	500–600	≥ 4	180–210
R530(TM00)	530–620	77–90	500–600	≥ 4	165–200
R580(TM02)	580–650	85–95	560–640	≥ 4	175–210
R620(TM04)	620–720	90–105	600–710	≥ 2	180–220

\*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
R350(TB00)	0	0	-	-
R530(TM00)	0.5	1.0	-	-
R530(TR04)	0.5	1.0	-	-
R580(TM02)	0.5	1.3	-	-
R620(TM04)	1.0	1.7	-	-

90° bend test according to EN ISO7438, 180° bend test according to ASTM B820, shown values might show orange-peel, however no crack.

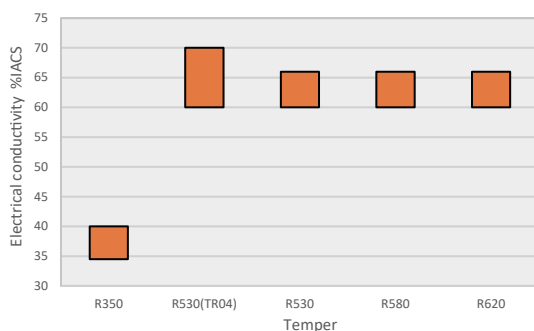
### Packaging

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 0.06–2.0 mm, other gauges on request.  
 Strip width from 8.5 mm.  
 Hot-dip tinned and electroplated 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.

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