

## boway 19010

### Material Designation

Boway designation	boway 19010
UNS	C19010
EN	CuNiSi
JIS	--
GB(China)	--

### Chemical Composition\*

Ni	1.5	%
Si	0.25	%
Cu	Rem.	

\* Nominal composition

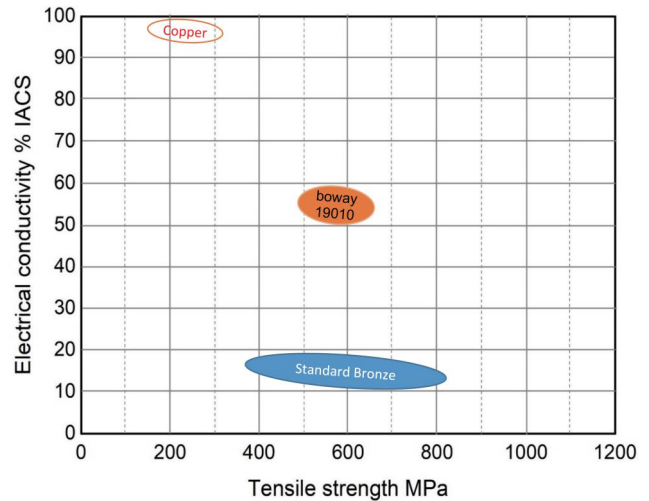
### Application Target

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

Ideal for power connectors

### Fabrication Properties

Cold forming	Good
Machining	Average
Electroplating	Good
Hot dip tinning	Good
Laser welding	Suitable
Resistance welding	Average
Soft soldering	Good



### Characteristics

Medium conductivity and medium strength combined with good stress relaxation resistance and good formability. Used for applications up to 120°C when using tinned surface. Lower end HPA.

### Physical Properties\*

Density	8.9	g/cm <sup>3</sup>
Electrical conductivity @ 20°C	57	% IACS
	33	MS/m
Thermal conductivity @ 20°C	260	W/(m·K)
Specific heat capacity	0.377	J/(g·K)
Modulus of elasticity	130	GPa
Poisson's ratio	0.33	
Coefficient of thermal expansion**	16.8	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	MPa	HV	A50 %
R490(TM04)	490 - 560	71 - 81	≥ 410	145 - 175	≥ 10
R520(TM06)	520 - 590	75 - 86	≥ 460	150 - 180	≥ 8
R580(TM08)	580 - 655	84 - 95	≥ 520	180 - 220	≥ 6

\*For reference only

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

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R490(TM04)	0.8	1	1.5	2
R520(TM06)	1	1.5	1.5	2
R580(TM08)	1	1.5	2	3

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

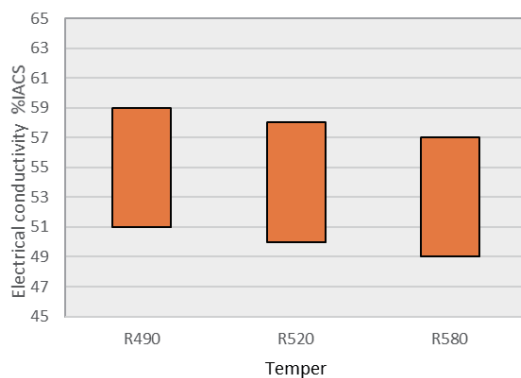
## Packaging

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.  
 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. For solid solution fine grain materials fatigue strength might increase up to 0,5 \* of tensile strength.