

## boway 19400

### Material Designation

Boway designation	boway 19400
UNS	C19400
EN	CuFe2P
JIS	C1940
GB(China)	TFe2.5

### Chemical Composition\*

Fe	2.3	%
P	0.03	%
Cu	Rem.	

\* Nominal composition

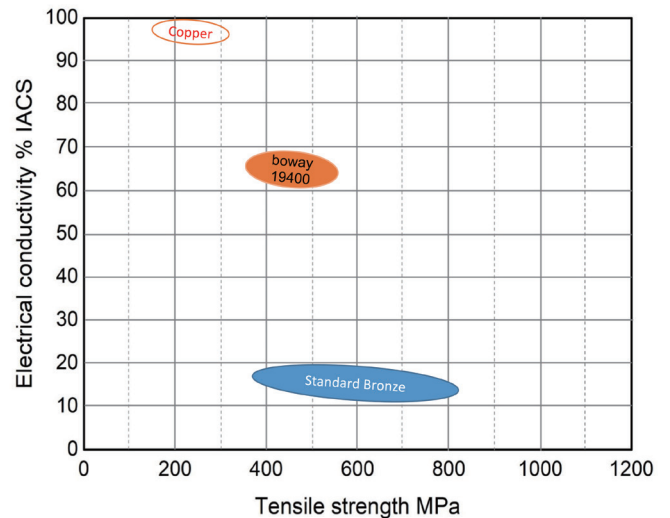
### Application Target

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

Ideal for semiconductor

### Fabrication Properties

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



### Characteristics

High strength and good electrical conductivity with excellent softening resistance performance and good corrosion resistance.

Standard material for semiconductor applications, stamping as well as etching quality available.

### Physical Properties\*

Density	8.8	g/cm <sup>3</sup>
Electrical conductivity @ 20°C	66	% IACS
	38	MS/m
Thermal conductivity @20°C	280	W/(m·K)
Specific heat capacity	0.385	J/(g·K)
Modulus of elasticity	121	GPa
Poisson's ratio	0.33	
Coefficient of thermal expansion**	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	Hardness*	Elongation
	MPa	ksi	MPa	HV	A50 %
R365(1/2H)	365 - 435	53 - 63	≥ 250	110 - 140	≥ 6
R415(H)	415 - 485	60 - 70	≥ 365	125 - 145	≥ 3
R460(EH)	460 - 525	67 - 77	≥ 440	130 - 155	≥ 2
R480(SH)	485 - 545	70 - 79	≥ 460	135 - 160	≥ 2
R530(XSH)	≥ 530	≥ 77	≥ 500	≥ 150	≥ 1
R550(SSH)	≥ 550	≥ 80	≥ 520	≥ 155	≥ 1

\*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
R365(1/2H)	0	0	1	1
R415(H)	0.5	0.5	1.5	1.5
R460(EH)	0.5	1	1.5	1.5
R480(SH)	0.8	1.2	2.0	2.0
R530(XSH)	1.5	2	-	-
R550(SSH)	-	-	-	-

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

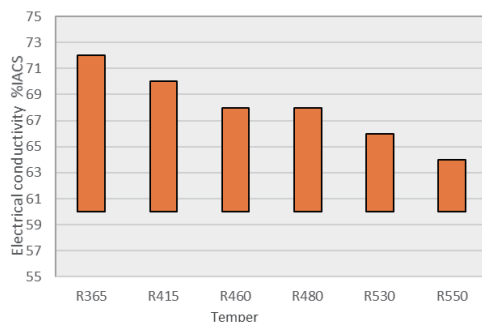
## Packaging

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.

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