

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

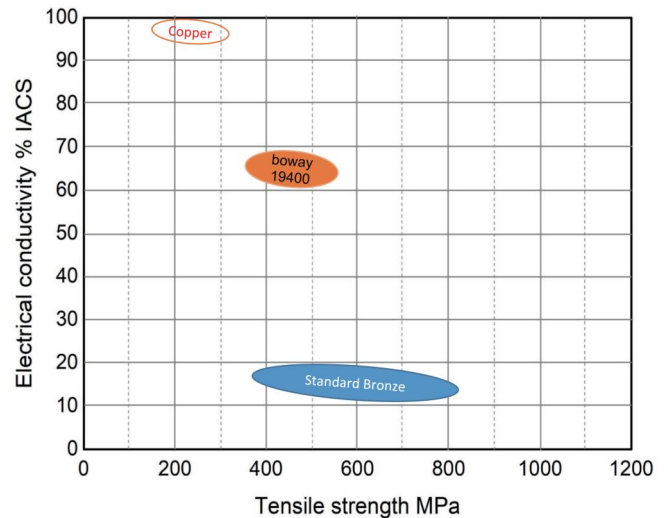
Application Target

Signal Connector	Suitable
Power Connector	Suitable
Miniaturized Connector	Not recommend
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 ³
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 ⁻⁶ /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			
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.

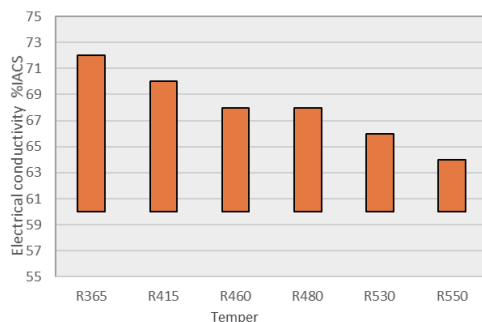
Packaging

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.