

boway 19210

Material Designation

| | |
|-------------------|-------------|
| Boway Designation | boway 19210 |
| UNS | C19210 |
| EN | CuFe0.1P |
| JIS | C1921 |
| GB(China) | TFe0.1 |

Chemical Composition*

| | | |
|----|------|---|
| Fe | 0.1 | % |
| P | 0.03 | % |
| Cu | Rem. | |

* Nominal composition

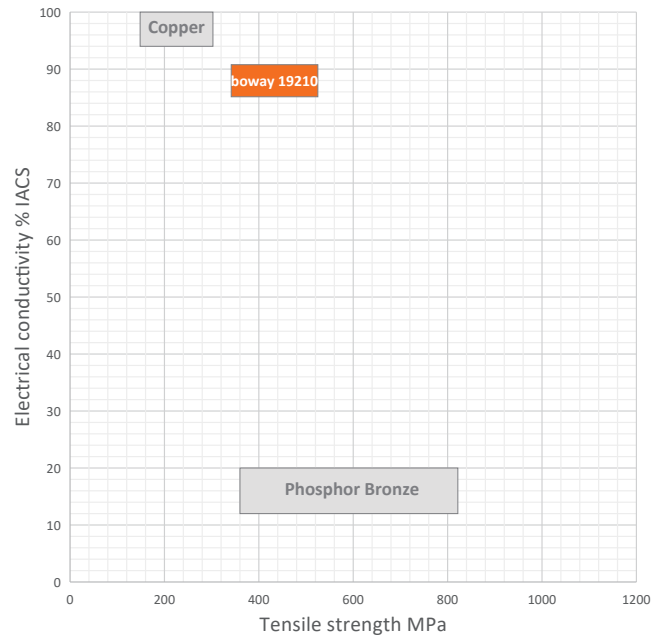
Application Target

| | |
|------------------------|-----------------|
| Signal connector | Suitable |
| Power connector | Suitable |
| Miniaturized connector | Not recommended |
| Switch/Relay | Suitable |
| Semiconductor | Very suitable |

Ideal for semiconductor

Fabrication Properties

| | |
|--------------------|-----------|
| Cold forming | Good |
| Machining | Average |
| Electroplating | Good |
| Hot dip tinning | Very good |
| Laser welding | Average |
| Resistance welding | Good |
| Soft soldering | Good |



Characteristics

Excellent electrical conductivity and thermal conductivity combined with good softening and corrosion resistance. Medium strength and excellent bending formability. No sensitivity to stress corrosion cracking.

Physical Properties*

| | | |
|------------------------------------|-------|---------------------|
| Density | 8.9 | g/cm ³ |
| Electrical conductivity@20°C | 89 | % IACS |
| Thermal conductivity@20°C | 51 | MS/m |
| Specific heat capacity | 350 | W/(m·K) |
| Modulus of elasticity | 0.385 | J/(g·K) |
| Poisson's ratio | 125 | GPa |
| Coefficient of thermal expansion** | 0.33 | 10 ⁻⁶ /K |

* Typical values at room temperature for reference

** Average value between 20–300°C

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Mechanical Properties (Values Underlined Are For Reference Only)

| Temper | Tensile strength | | Yield strength | Elongation | Hardness |
|------------|------------------|-------|----------------|------------|----------------|
| | MPa | ksi | MPa | A50 % | HV |
| R360(3/4H) | 360–425 | 53–62 | ≥ 345 | ≥ 4 | <u>115–135</u> |
| R385(H) | 385–455 | 56–66 | ≥ 355 | ≥ 3 | <u>120–140</u> |
| R415(EH) | 415–480 | 60–70 | ≥ 400 | ≥ 2 | <u>125–145</u> |
| R440(SH) | 440–510 | 64–74 | ≥ 425 | ≥ 1 | <u>130–150</u> |
| Annealed | 190–290 | 27–42 | ≥ 110 | ≥ 30 | |
| H01* | 300–365 | 43–53 | ≥ 135 | ≥ 20 | |
| H02* | 325– 410 | 47–60 | ≥ 310 | ≥ 5 | |
| H03* | 355–425 | 52–62 | ≥ 345 | ≥ 4 | |
| H04* | 385–455 | 56–66 | ≥ 355 | ≥ 3 | |
| H06* | 410–480 | 60–70 | ≥ 400 | ≥ 2 | |
| H08* | 440–510 | 64–74 | ≥ 425 | ≥ 1 | |
| H10* | ≥ 455 | ≥ 66 | ≥ 440 | ≥ 1 | |

*According to ASTM E 152

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 |
| R360 | 0.5 | 1 | 1 | 1.5 |
| R385 | 1 | 1 | 1.5 | 1.5 |
| R415 | 1.5 | 1.5 | 1.5 | 2 |
| R440 | 1.5 | 2 | 2 | 2 |

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

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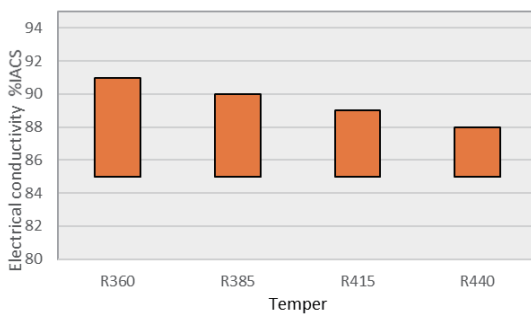
Packaging

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.