

Wieland-K65

CuFe2P | High copper alloy

Material designation

| | |
|-----|------------------|
| EN | CuFe2P CW107C |
| UNS | C19400 |

Chemical composition*

| | |
|----|---------|
| Cu | balance |
| Fe | 2.25 % |
| P | 0.02 % |
| Pb | < 0.03% |

*Richtwerte in Gew. %

Physical properties*

| | | |
|--|---------------------|----------|
| electrical conductivity | MS/m %IACS | 35 60 |
| Thermal conductivity | W/(m·K) | 260 |
| Thermal expansion coefficient (0–300 °C) | 10 ⁻⁶ /K | 17.6 |
| Density | g/cm ³ | 8.91 |
| Modulus of elasticity | GPa | 123 |

* Reference values at room temperature

Corrosion resistance

Pure copper and high-copper alloys generally exhibit good corrosion resistance due to their inert character and are practically insensitive to stresscorrosion cracking.

Product standards

| | |
|------|----------|
| Wire | EN 12166 |
| Tube | EN 12449 |

Material properties and typical applications

Wieland K65 is a high-copper alloy combining medium electrical and thermal conductivity with medium strength. Good hardening is achieved by finely dispersed iron precipitation in the structure. Because of these properties Wieland-K65 is used for electronic components such as connectors and switches.

The material is lead free according to RoHS and ELV.

Types of delivery

The BU Extruded Products supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties

Forming*

| | |
|-----------------------------------|-----------|
| Machinability (CuZn39Pb3 = 100 %) | 25 % |
| Capacity for being cold worked | excellent |
| Capacity for being hot worked | fair* |

Surface treatment

| | |
|----------------------|------|
| Polishing mechanical | good |
| elektrolytic | fair |
| Electroplating | good |

Joining

| | |
|--------------------------------|------------|
| Resistance welding (butt weld) | fair* |
| Inert gas shielded arc welding | excellent* |
| Gas welding | excellent* |
| Hard soldering | excellent* |
| Soft soldering | excellent* |

*high temperatures change the ageing condition

Heat treatment

| | |
|--------------------------|---------------------|
| Melting range | 1.080–1.090 °C |
| Hot working | 800–900 °C |
| Soft annealing | 450–700 °C 1–3 h |
| Thermal stress relieving | – |

Trademarks



Further information is provided in our brochures on WITRONIC.

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Mechanical properties according to EN

| Round wires | | | | | | | | | | acc. to EN 12166 |
|-------------|----------|-----|---|----------------------------------|------|--------------|-------|------|----------|------------------|
| Temper | Diameter | | Tensile strength R _m | Yield strength R _{p0.2} | | Elongation % | | | Hardness | |
| | mm | | MPa | MPa | | A100 | A11,3 | A | HB | |
| | von | bis | min. | min. | max. | min. | min. | min. | min. | max. |
| M | all | | as manufactured – without specified mechanical properties | | | | | | | |
| R300 | 1.5 | 12 | 300 | 110 | | 17 | 20 | 23 | – | – |
| H050 | 1.5 | 12 | – | – | – | – | – | – | 50 | 100 |
| R400 | 0.3 | 8 | 400 | 350 | – | 6 | 7 | – | – | – |
| H110 | 1.5 | 8 | – | – | – | – | – | – | 110 | 140 |
| R500 | 0.1 | 3 | 500 | 450 | – | 2 | – | 3 | – | – |
| H150 | 1.5 | 3 | – | – | – | – | – | – | 150 | 180 |

| Tubes | | | | | | | | | | acc. to EN 12449 |
|--------|---------------|---|----------------------------------|------|--------------|----------|------|------|------|------------------|
| Temper | Wallthickness | Tensile strength R _m | Yield strength R _{p0.2} | | Elongation A | Hardness | | | | |
| | mm | MPa | MPa | | % | HV | | HB | | |
| | von | min. | min. | max. | min. | min. | max. | min. | max. | |
| M | 20 | as manufactured – without specified mechanical properties | | | | | | | | |
| R300 | 20 | 300 | – | 250 | 25 | – | – | – | – | |
| H085 | 10 | – | – | – | – | 85 | 115 | 80 | 110 | |
| R370 | 10 | 370 | 250 | – | 15 | – | – | – | – | |
| H110 | 5 | – | – | – | – | 110 | 140 | 105 | 135 | |
| R420 | 5 | 420 | 320 | – | 5 | – | – | – | – | |
| H135 | 5 | – | – | – | – | 135 | – | 130 | – | |