

KHP[®] 102 (CuNiSi)

Standard Designation

EN not standardised /UNS C19010

Chemical Composition

| Cu | Ni [%] | Si [%] | P [%] |
|---------|--------|--------|-------|
| Balance | 1.3 | 0.25 | 0.03 |

Description / Applications

KHP[®]102 is a CuNiSi (Corson type) alloy. KHP[®]102 provides an outstanding combination of high electrical conductivity and good strength.

Applications: connector springs, tabs, contact springs, switches, relays, leadframes

Physical Properties¹⁾

| | | | |
|-------------------------|--|-------------------------------|--------------------------|
| Density | 8,9 g/cm ³ | Thermal expansion coefficient | 16,8·10 ⁻⁶ /K |
| Electrical conductivity | 35 (29 ²⁾) m/Ω·mm ² 60 (50 ²⁾)% IACS ³⁾ | Modulus of elasticity | 127 GPa ⁴⁾ |
| Thermal conductivity | 260 (197 ²⁾) W/m·K | | |

¹⁾ Guideline values for soft temper, measured at room temperature

²⁾ for temper R580

³⁾ IACS = International Annealed Copper Standard

⁴⁾ 1 GPa = 1 kN/mm²

Processing information

| | | | |
|---------------|------|---------------------------|------|
| Weldability | good | Stress corrosion cracking | none |
| Solderability | good | | |

Mechanical properties

| Temper | Tensile Strength Rm [MPa] | Yield Strength Rp0,2 [MPa] | Elongation A50 [%] | Hardness HV | Bendability ¹⁾ | | | |
|--------|---------------------------|----------------------------|--------------------|-------------|---------------------------|------------------|------------------------|------------------|
| | | | | | 90° r/t ²⁾ | | 180° r/t ²⁾ | |
| | | | | | GW ³⁾ | BW ⁴⁾ | GW ³⁾ | BW ⁴⁾ |
| R360 | 360 - 430 | min. 250 | min. 12 | 100 - 130 | 0 | 0 | 0 | 0 |
| R410 | 410 - 480 | min. 360 | min. 10 | 130 - 150 | 0 | 0 | 0.5 | 1 |
| R460 | 460 - 530 | min. 430 | min. 8 | 140 - 160 | 1 | 1 | 1 | 1 |
| R520 | 520 - 580 | min. 490 | min. 5 | 150 - 170 | 1 | 1.5 | 1.5 | 2 |
| R580 | 580 - 650 | min. 540 | min. 9 | 175 - 205 | 0.5 | 1 | 1 | 1.5 |
| R580S | 580 - 650 | min. 520 | min. 10 | 175 - 205 | 0.5 | 1 | 1 | 1.5 |

¹⁾ The r/t values are valid for a strip thickness up to 0.6 mm (without crack). The data refer to rolled-to-temper material and a width of the bending area of 5 mm.

V-shape bend test according to ISO 7438

²⁾ r = inner radius, t = thickness

³⁾ GW = good way

⁴⁾ BW = bad way

The details in this datasheet are exclusively meant for general information only. They correspond to the state of knowledge at the time of issue and cannot replace the examination by our customers. Liability cannot be derived from the information.

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