# KHP®109 (CuNi1Sn0.9)

KEMPER
DRIVING PROGRESS

## Standard Designation

EN not standardised /UNS C19025

## Chemical Composition

| Cu [%] | Ni [%] | Sn [%] | P [%] |
|---|---|---|---|
| Balance | 1 | 0.9 | 0.05 |

## Description / Applications

KHP®109 is a CuNiSn alloy. KHP®109 provides an excellent combination of high electrical conductivity and good strength.
Applications: Connectors, contact springs, switches, relays, IC leadframes

## Physical Properties[1)]

| | | | |
|---|---|---|---|
| Density | 8.9 g/cm³ | Thermal expansion coefficient | $17 \cdot 10^{-6}$/K |
| Electrical conductivity | 23 m/Ω·mm²<br>40 % IACS[2)] | Modulus of elasticity | 130 GPa[3)] |
| Thermal conductivity | 161 W/m·K | | |

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

[2)] IACS = International Annealed Copper Standard

[3)] 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)] |
| R335 | 335 - 470 | min. 315 | min. 15 | 120 - 155 | 0 | 0 | 0 | 0.5 |
| R440 | 440 - 520 | min. 420 | min. 9 | 135 - 170 | 0 | 1 | 0 | 1 |
| R500 | 500 - 570 | min. 480 | min. 5 | 155 - 180 | 0.5 | 1 | 0.5 | 2 |
| R540 | 540 - 610 | min. 520 | min. 4 | 160 - 195 | 1 | 2 | 1.5 | 3 |
| R580 | 580 - 650 | min. 560 | - | 175 - 210 | 1 | 5 | 2 | - |
| R630 | 630 - 730 | min. 610 | - | min. 190 | 1.5 | | 3 | - |
| | | | | | | | | |

[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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