CuSn0.15

EN_2024_06

Comparable standards: UNS C14415 • EN CW117C

Aurubis designations: C14415 • PNA 216 • CuSn0.15

Description

PNA 216 CuSn0.15 wire material is solid solution strengthened by a small tin adddition. It has increased strength as well as good electrical and thermal conductivity. Moreover the alloy exhibts an increased temperature stability compared to highest conductive copper alloys.The alloy can be well formed, exhibits a good corrosion resistance and is suited for soldering, brazing and welding.

Composition

Cu [%]	Sn [%]
rem	0.10-0.15

Composition of this alloy is in accordance with RoHS for electric & electronic components and ELV for the automotive industry.

Physical properties

Melting point [°C]	Density [g/cm³]	c_p @ 20°C [kJ/kgK]	Young's modulus [GPa]	Thermal cond. [W/mK]	Electrical cond. [MS/m]	Electrical cond. [%IACS]	α @20-300°C [10^{-6}/K]
1081	8.93	0.385	130	340	≥ 47	≥ 81	17.3

Note: The specified conductivity applies to the soft condition only.

c_p specific heat capacity

α coefficient of thermal expansion

Mechanical properties

	Diameter [mm]	Tensile Strength [MPa]	Yield Strength [MPa]	Elongation A [%]	Hardness HV [-]
R250		250-320	≥ 200	≥ 9	60-90
R300		300-370	≥ 250	≥ 4	85-110
R360		360-430	≥ 300	≥ 3	105-130
R420		420-490	≥ 350	≥ 2	120-140

Other tempers are available upon request.

Fabrication properties

Machinability*	10%
Cold formability	excellent
Hot formability	excellent
Resistance welding	fair
Oxyacetylene welding	good
Inert gas shield arc welding	good
Brazing	excellent
Soldering	excellent

*The evaluation of machinability is not an absolute measured value. It rather is a comparative rating (CuZn39Pb3=100%). Ratings from other sources might be different.

Heat treatment

Melting range	1083 °C
Hot working	800-950 °C
Soft annealing	300-500 °C
Thermal stress relieving	150-200 °C

Corrosion Resistance

Copper is resistant to: Natural and industrial atmospheres as well as maritime air, drinking and service water, non oxidizing acids, alkaline solutions and neutral saline solutions.
Copper is not resistant to: Ammonia, halogenide, cyanide and hydrogen sulfide solutions and atmospheres, oxidizing acids and sea water (especially at high flow rates).
CuSn0.15 has an improved resistance to pitting- and erosion corrosion compared to Cu-DHP.

Typical uses

Automotive, components of electrical engineering, connectors

Types of delivery

Please get in touch with your contact person about the available shapes, dimensions and conditions.