

# CuSn0.15

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Comparable standards: UNS C14415 • EN CW117C  
 Aurubis designations: PNA 216 • CuSn0.15

**Description** PNA 216 CuSn0.15 wire material is solid solution strengthened by a small tin addition. It has increased strength as well as good electrical and thermal conductivity. Moreover the alloy exhibits 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	Density	c <sub>p</sub> @ 20°C	Young's modulus	Thermal cond.	Electrical cond.		α @20-300°C
[°C]	[g/cm <sup>3</sup> ]	[kJ/kgK]	[GPa]	[W/mK]	[MS/m]	[%IACS]	[10 <sup>-6</sup> /K]
1081	8.93	0.385	130	340	≥ 47	≥ 81	17.3

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

c<sub>p</sub> specific heat capacity  
 α coefficient of thermal expansion

**Mechanical properties**

	Diameter	Tensile Strength	Yield Strength	Elongation A	Hardness HV
	[mm]	[MPa]	[MPa]	[%]	[-]
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.

<b>Fabrication properties</b>	<b>Machinability*</b>	10%
	<b>Cold formability</b>	excellent
	<b>Hot formability</b>	excellent
	<b>Resistance welding</b>	fair
	<b>Oxyacetylene welding</b>	good
	<b>Inert gas shield arc welding</b>	good
	<b>Brazing</b>	excellent
	<b>Soldering</b>	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.

<b>Heat treatment</b>	<b>Melting range</b>	1083 °C
	<b>Hot working</b>	800-950 °C
	<b>Soft annealing</b>	300-500 °C
	<b>Thermal stress relieving</b>	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.

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