CuSn0.15

CuSn0.15 | C14415

Alloyed with a small amount of tin, CuSn0.15 offers high strength combined with good electrical (min. 81% IACS) and thermal conductivity. It also provides superior temperature stability compared to high-conductivity copper alloys.
The alloy features good formability, good corrosion resistance, and is suitable for soldering and welding.

Comparable Standarts

EN	UNS
CW117C	C14415

Chemical Composition %

Cu	Sn
rem.	0.10-0.15

Physical Properties

Melting Point	1081	[°C]
Density	8.93	(g/cm³)
Cp @ 20°C	0.385	[kJ/kgK]
Thermal Conductivity	340	(W/mK)
Electrical Conductivity	≥81	%IACS
Modules of Elasticity	130	[GPa]
α @ 20°C	17.3	[10-6/K]

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

Cp specific heat

α thermal expansion coefficent

Fabrication Properties

Cold Formability	excellent
Hot Formability	excellent
Soldering ability	excellent
Oxyacetylene welding	fair
Gas shield arc welding	good
Resistance welding	not recommended
Machining	not recommended
Brazing	excellent

Electrical Conductivity

Electrical conductivity depends on chemical composition, the level of cold deformation, and grain size. A high degree of deformation and a small grain size reduce conductivity.

Typcial Uses

Automotive, electrical components, connectors, and lead frames.

Corrosion Resistance

Copper is resistant to natural and industrial atmospheres, as well as marine air, potable and service water, non-oxidizing acids, alkaline solutions, and neutral salt solutions.
Copper has low corrosion resistance to ammonia, halogens, cyanide and hydrogen sulfide solutions and atmospheres, oxidizing acids, and seawater (especially at high flow rates).
CuSn0.15 offers improved resistance to pitting and erosion corrosion compared to Cu-DHP.

Mechanical Properties

	Tensile Strength [MPa]	Yield Strength [MPa]	Elongation A50 [%]	Hardness HV [-]	Bend ratio 90° [r]		Bend ratio 180° [r]	
					GW	BW	GW	BW
R250	250-320	≥ 200	≥ 9	60-90	0	0	0	0
R300	300-370	≥ 250	≥ 4	85-110	0	0	0	-
R360	360-430	≥ 300	≥ 3	105-130	0	0	-	-
R420	420-490	≥ 350	≥ 2	120-140	1	1	-	-

Other tempers are available upon request.

r = x * t (thickness t ≤ 0.5mm)

GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction.

Dimensional Specifications

Thickness (mm)	Width (mm)
0.035 - 0.20	10-400
0.21-1.00	5-400
1.01-4.00	15-400
4.01-5.00	25-400

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