

SM201 (C 14415)

CuSn0.15

Alloy characteristics

SM201 is very low-tinned copper alloy with very high electrical conductivity. Not being in a position to have the same spring power as our SM688 or Bronze, but against copper this alloy is much harder. In the automotive industry this alloy is used as main connector in the central electric application. This material is used, as well, for LED and other lead frame applications. Under high priority the material is inserted for semiconductors. Due to the very good electrical conductivity and the better thermal expansion, this SM201 is used more often than SM194 in some connector applications. Here it must be said, as well, the better recyclability against SM194, here especially when tinned. The material can be welded and soldered very well. Its applications are in connectors, all kind of carriers, contact springs, relays, stamping parts and many electronic applications. The cold forming behavior of the material is very good. The material is in line with the U.S. EPA and meets the OEKO-TEX standard regarding the Pb and Cd.

Mechanical properties		Temper conditions				
		0 HV60-90	H01 HV85-110	H02 HV105-130	H03 HV120-140	H04 HV135-155
Tensile strength in N/mm ²		250-320	300-370	360-430	420-490	460-560
0,2% yield strength in N/mm ² min.		200	250	320	400	410
Vickers hardness HV (reference value only)		60-90	85-110	105-130	120-140	135-155
Elongation A _{L50%}		>15	>4	>3	>2	>2
Electrical conductivity in % IACS		83	83	82	82	82
Bendability						
0.10 ≤ s ≤ 0.25 mm	Transverse	0 x s	0 x s	0 x s	1 x s	1.5 x s
	Parallel	0 x s	0 x s	0 x s	1 x s	1.5 x s
0.25 < s ≤ 0.5 mm	Transverse	0 x s	0 x s	0.5 x s	1 x s	-
	Parallel	0 x s	0 x s	0.5 x s	1.5 x s	-

Physical properties

Thermal expansion coefficient 20 ... 300 °C	17.0	10 ⁻⁶ /K
Density	8.9	g/cm ³
Thermal conductivity	360	W/(m·K)
Modulus of elasticity (1 GPa = 1 kN/mm ²) cold formed	128	GPa = kN/mm ²
Electrical conductivity soft	48	MS/m

Material designation

DIN EN Symbol	CuSn0.15
UNS	C14415
JIS	C1441

Chemical composition

Cu	Balance
Sn	0.12 %
Fe	<0.02 %
Ni	<0.02 %
Zn	<0.10
P	<0.015

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