

Edition from	03.02.2021	Alloy data sheet	No. 180
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Alloy	ISO	EN	ASTM
C99	CuPb1P	-	C18700

Others:

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Main characteristics Oxygen-free copper with low phosphorus content and addition of lead to improve machinability, high electrical and thermal conductivity.

Chemical Composition

	Cu Remainder	Pb 0,7 - 1,5 %	P 0,003 – 0,012 %
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Impurities
Max. Others
 0,1 %

Product portfolio Hot extruded and cold drawn products

Section type	Round
Rod	Available, 1 – 40 mm
Wire	Available, 1 – 6,35mm
Profile	On demand

Examples of use Transformer and circuit breaker connections, contacts, terminals and other electrical conductors, turned parts.

Mechanical properties	Form	Temper	Dimension Ø, SW	UTS N/mm ²	YS N/mm ²	A %	Hardness HB
Round rods Round wires		H065	2 - 80	-	-	-	65 - 100
		R250	2 - 50	> 250	> 170	> 7	-
		R240	> 50 - 80	> 240	> 140	> 8	-
		H085	2 - 20	-	-	-	85 - 110
		H075	> 20 - 50	-	-	-	75 - 100
		R300	2 - 20	> 300	> 250	> 5	-
		R270	> 20 - 50	> 270	> 200	> 6	-

Other tempers on demand

Physical properties	Density	kg/dm ³	8,9
	Melting range	°C	1079 – 1082
	Linear expansion coefficient (20-200°C)		0,000017
	Specific heat	J/kg K	380
	Thermal conductivity at 20°C (68° F)	W/m · K	370
	Electrical conductivity at 20° C (68° F)	% IACS	86
	Elasticity modulus	kN/mm ²	118

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Workability	Cold working, maximum section reduction	%	good, 90
	Hot working, temperature range	°C	medium, 735 - 800
	Machining, compared with CuZn39Pb3 (100 %)	%	60
	Solution annealing	°C	425 - 650
	Stress relieving	°C	225 - 275
	Soft soldering		medium, 50
	Hard soldering		low, 25
	Autogenous welding		not recommended
	Arc welding		not recommended
	Resistance welding		not recommended

Symbols	Ø	=	round rod diameter (mm)
	SW	=	width across flats (hexagonal or square rods) (mm)
	UTS	=	ultimate tensile strength
	YS	=	yield stress at 0,2 %
	A	=	tensile elongation
