Brand Name	**A-COPPER 2.5**[1)]
Material Code	
Abbreviation	**CuNi1**[2)]

Chemical Composition (mass components) in %.
Average values of alloy components

Cu Rem.	**Ni** 0.6				

Features and Application Notes

A-COPPER 2.5 is especially characterized by very low resistivity. This alloy is used for heating wires and mats in heating cords and in heating cables with low conductor temperatures as well as tube weldings. It provides a relatively high corrosion resistance. Flat wires and ribbons are used for protective switches. The maximum working temperature in air is +200 °C.

Form of Delivery

A-COPPER 2.5 is supplied in the form of round wires in the range 0.05 to 8.00 mm Ø and stranded wires. On request, larger quantities can be delivered in other forms.

Electrical Resistance in Annealed Condition

Temperature coefficient of electrical resistance between	Electrical resistivity in: µΩ x cm (first line) and Ω/CMF (second line) Reference Values					
+20 °C and +105 °C 10^{-6}/K	+20 °C tolerance ±10 %	+100 °C	+200 °C	+300 °C	+400 °C	+500 °C
approx. +3,000	**2.5**	**3.1**	**3.9**			
	15	**18**	**24**			

Physical Characteristics (Reference Values)

Density at +20 °C		Melting point	Specific heat at +20 °C	Thermal conductivity at +20 °C	Average linear thermal expansion coefficient between +20 °C and		Thermal EMF against copper at
					+100 °C	+400 °C	+20 °C
g/cm³	**lb/cub in**	**°C**	**J/g K**	**W/m K**	**10^{-6}/K**	**10^{-6}/K**	**µV/K**
8.9	**0,32**	**1,085**	**0.38**	**≈ 275**	**17**	**18**	**-6.4**

Mechanical Properties at +20 °C in Annealed Condition

Tensile Strength[3)]		Elongation (L_0 = 100 mm) % at nominal diameter in mm				
MPa	**psi**	0.020 to 0.063	> 0.063 to 0.125	> 0.125 to 0.50	> 0.50 to 1.00	> 1.00
220	**32,000**	< **10**	≈ **10**	≈ **15**	≥ **20**	≥ **25**

Notes on Treatment // A-COPPER 2.5 is easy to process. Copper-nickel alloys can be soft and hard soldered as well as welded by the known processes. On request we supply material tested according to DIN EN 60068-2-20.

1) A-COPPER 2.5 must not be confused with A-COPPER 11, the latter being exclusively used for thermo compensation cables according to IEC 60584.
2) A-COPPER 2.5 is not a standardized alloy.
3) This value applies to wires of 2.0 mm diameter. For thinner wires the minimum values will substantially increase, depending on the dimensions.

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Nominal Diameter	Cross Section	Weight per 1.000 m	DC Resistance Referred to Length at +20 °C Ω/m			
mm	mm²	g	Nominal Value	Tolerance	Minimum Value	Maximum Value
0.050	0.00196350	17.50	12.7			
0.056	0.00246301	21.90	10.2			
0.060	0.00282743	25.20	8.84			
0.063	0.00311725	27.70	8.02			
0.070	0.00384845	34.30	6.50			
0.071	0.00395919	35.20	6.31			
0.080	0.00502655	44.70	4.97			
0.090	0.0063617	56.60	3.93			
0.100	0.0078540	69.90	3.18			
0.110	0.0095033	84.60	2.63			
0.112	0.0098520	87.70	2.54			
0.120	0.0113097	101.00	2.21			
0.125	0.0122718	109.00	2.04			
0.130	0.0132732	118.00	1.88			
0.140	0.0153938	137.00	1.62			
0.150	0.017671	157.00	1.41		Tolerance values upon request	
0.160	0.020106	179.00	1.24			
0.180	0.025447	226.00	0.982			
0.200	0.031416	280.00	0.796			
0.220	0.038013	338.00	0.658			
0.224	0.039408	351.00	0.634			
0.250	0.049087	437.00	0.509			
0.280	0.061575	548.00	0.406			
0.300	0.070686	629.00	0.354			
0.315	0.07793	694.00	0.321			
0.350	0.09621	856.00	0.260			
0.355	0.09898	881.00	0.253			
0.400	0.1257	1,120.00	0.199			
0.450	0.1590	1,420.00	0.157			
0.500	0.1963	1,750.00	0.127			
0.550	0.2376	2,110.00	0.105			
0.560	0.2463	2,190.00	0.102			

Nominal Diameter	Cross Section	Weight per 1.000 m	DC Resistance Referred to Length at +20 °C Ω/m			
mm	mm²	g	Nominal Value	Tolerance	Minimum Value	Maximum Value
0.60	0.2827	2,520.00	0.0884			
0.63	0.3117	2,770.00	0.0802			
0.65	0.3318	2,950.00	0.0753			
0.70	0.3848	3,430.00	0.0650			
0.71	0.3959	3,520.00	0.0631			
0.80	0.5027	4,470.00	0.0497			
0.90	0.6362	5,660.00	0.0393			
1.00	0.7854	6,990.00	0.0318			
1.12	0.9852	8,770.00	0.0254			
1.20	1.131	10,070.00	0.0221			
1.25	1.227	10,920.00	0.0204			
1.40	1.539	13,700.00	0.0162			
1.50	1.767	15,730.00	0.0141			
1.60	2.011	17,900.00	0.0124			
1.80	2.545	22,650.00	0.00982			
2.00	3.142	27,960.00	0.00796		Tolerance values upon request	
2.20	3.801	33,830.00	0.00658			
2.24	3.941	35,070.00	0.00634			
2.50	4.909	43,690.00	0.00509			
2.80	6.158	54,800.00	0.00406			
3.00	7.069	62,910.00	0.00354			
3.15	7.793	69,360.00	0.00321			
3.20	8.042	71,580.00	0.00311			
3.50	9.621	85,630.00	0.00260			
3.55	9.898	88,090.00	0.00253			
4.00	12.57	111,840.00	0.00199			
4.50	15.90	141,550.00	0.00157			
5.00	19.63	174,750.00	0.00127			
5.50	23.76	211,450.00	0.00105			
5.60	24.63	219,210.00	0.00102			
6.00	28.27	251,640.00	0.000884			
6.30	31.17	277,440.00	0.000802			
8.00	50.27	447,360.00	0.000497			

A-COPPER 2.5 is not a standard resistance alloy. Therefore this table contains no minimum and maximum values. The nominal values quoted are derived from the resistivity. The tolerance values must be separately be agreed upon.