Brand Name	**ALLOY 30**[1)]
Material Code	**2.0802**
Abbreviation	**CuNi2**

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

Cu	**Ni**				
Rem.	2				

Features and Application Notes

ALLOY 30 is especially characterized by low resistivity. It is used for low-value resistors, for heating wires and mats in heating cords and in heating cables with low conductor temperatures as well as for the 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, for short-term application up to +300 °C.

Form of Delivery

ALLOY 30 is supplied in the form of round wires in the range 0.05 to 8.00 mm Ø in bare or enamelled condition, flat wires, stranded wires, ribbons and sheets.

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
+1,000 to +1,600	**5.0**	**5.7**	**6.4**			
	30	**34**	**38**			

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**
8.90	**0.32**	**+1,090**	**0.38**	**130.00**	**16.50**	**17.50**	**-15.00**

Strength Properties at +20 °C in Annealed Condition

Tensile Strength[2)]		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**	**≈ 8**	**≈ 15**	**≈ 18**	**≥ 18**	**≥ 25**

Notes on Treatment // ALLOY 30 can be worked easily. This alloy can be soldered and brazed without difficulty. All known welding methods can be used.

1) The number "30" indicates the resistivity, expressed in Ohm/cir. mil ft. (see Technical Information).
2) 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	0.001963	17.50	25.5	±8 %	23.4	27.5
0.056	0.002463	21.90	20.3		18.7	21.9
0.060	0.002827	25.20	17.7		16.3	19.1
0.063	0.003117	27.70	16.0		14.8	17.3
0.070	0.003848	34.30	13.0		12.0	14.0
0.071	0.003959	35.20	12.6		11.6	13.6
0.080	0.005027	44.70	9.95		9.20	10.7
0.090	0.006362	56.60	7.86		7.20	8.50
0.100	0.007854	69.90	6.37		5.90	6.90
0.110	0.009503	84.60	5.26	±7 %	4.90	5.60
0.112	0.009852	87.70	5.08		4.70	5.40
0.120	0.01131	101.00	4.42		4.10	4.70
0.125	0.01227	109.00	4.07		3.79	4.40
0.130	0.01327	118.00	3.77		3.50	4.00
0.140	0.01539	137.00	3.25		3.02	3.48
0.150	0.01767	157.00	2.83		2.63	3.03
0.160	0.02011	179.00	2.49		2.31	2.66
0.180	0.02545	226.00	1.96		1.83	2.10
0.200	0.03142	280.00	1.59	±6 %	1.50	1.69
0.220	0.03801	338.00	1.32		1.24	1.39
0.224	0.03941	351.00	1.27		1.19	1.34
0.250	0.04909	437.00	1.02		0.960	1.08
0.280	0.06158	548.00	0.812		0.760	0.860
0.300	0.07069	629.00	0.707		0.660	0.750
0.315	0.07793	694.00	0.642	±5 %	0.610	0.670
0.350	0.09621	856.00	0.520		0.490	0.550
0.355	0.09898	881.00	0.505		0.480	0.530
0.400	0.1257	1,120.00	0.398		0.378	0.420
0.450	0.1590	1,420.00	0.314		0.299	0.330
0.500	0.1963	1,750.00	0.255		0.242	0.267

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
0.550	0.2376	2,110.00	0.210		0.202	0.219
0.560	0.2463	2,190.00	0.203		0.195	0.211
0.600	0.2827	2,520.00	0.177		0.170	0.184
0.630	0.3117	2,770.00	0.160		0.154	0.167
0.650	0.3318	2,950.00	0.151		0.145	0.157
0.700	0.3848	3,430.00	0.130		0.125	0.135
0.710	0.3959	3,520.00	0.126		0.121	0.131
0.800	0.5027	4,470.00	0.0995		0.0950	0.103
0.900	0.6362	5,660.00	0.0786		0.0750	0.0820
1.000	0.7854	6,990.00	0.0637		0.0610	0.0660
1.120	0.9852	8,770.00	0.0508		0.0490	0.0530
1.200	1.131	10,070.00	0.0442		0.0420	0.0460
1.250	1.227	10,920.00	0.0407		0.0391	0.0420
1.400	1.539	13,700.00	0.0325		0.0312	0.0338
1.500	1.767	15,730.00	0.0283		0.0272	0.0294
1.600	2.011	17,900.00	0.0249		0.0239	0.0259
1.800	2.545	22,650.00	0.0196		0.0189	0.0204
2.000	3.142	27,960.00	0.0159	±4 %	0.0153	0.0166
2.200	3.801	33,830.00	0.0132		0.0126	0.0137
2.240	3.941	35,070.00	0.0127		0.0122	0.0132
2.500	4.909	43,690.00	0.0102		0.00980	0.0106
2.800	6.158	54,800.00	0.00812		0.00780	0.00840
3.000	7.069	62,910.00	0.00707		0.00680	0.00740
3.150	7.793	69,360.00	0.00642		0.00620	0.00670
3.200	8.042	71,580.00	0.00622		0.00600	0.00650
3.500	9.621	85,630.00	0.00520		0.00500	0.00540
3.550	9.898	88,090.00	0.00505		0.00480	0.00530
4.000	12.57	111,840.00	0.00398		0.00382	0.00410
4.500	15.90	141,550.00	0.00314		0.00302	0.00327
5.000	19.63	174,750.00	0.00255		0.00244	0.00265
5.500	23.76	211,450.00	0.00210		0.00202	0.00219
5.600	24.63	219,210.00	0.00203		0.00195	0.00211
6.000	28.27	251,640.00	0.00177		0.00170	0.00184
6.300	31.17	277,440.00	0.00160		0.00154	0.00167
8.000	50.27	447,360.00	0.000995		0.000955	0.00103