

ELEKTRISOLA

Au Gold

General Description

ELEKTRISOLA gold wire can be used for various applications, from jewelry to high tech. Our gold wire is available as bare wire or enamelled with all insulation and self-bonding enamels. Due to the high price of the raw material, more details are available upon request.

Features

- Corrosion resistant

Applications

- Bond wire
- Jewelry

Electrical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
χ	Conductivity		45.5		S*m/mm ²
ρ	Resistivity		0.022		Ω *mm ² /m
α	Thermal coefficient of resistance		1400		10E-6/K
	Resistance (IACS)		78		%

Mechanical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
σ_T	Tensile strength	120	190	240	N/mm ²
ε	Elongation	3	5	10	%

Physical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
ρ	Density		19.3		kg/dm ³

Note 1: Unless otherwise specified, all limits are guaranteed for annealed and enameled wire at $T_A = 20^\circ\text{C}$ and measured according international standard IEC 851 as far as applicable.

Note 2: Typical Values represent the most likely parametric norm.

Note 3: All limits are evaluated by testing or statistical analysis but are not guaranteed.

BANNED SUBSTANCES COMPLIANCE

ELEKTRISOLA FEINDRAHT AG certifies that the products and packing materials meet the provision from the European Union for the Restriction of certain Hazardous Substances (RoHS) and the directive for Waste from Electrical and Electronic Equipment (WEEE).

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Annex A

Electrical Resistance

The limits of electrical resistance are derived from the calculations made in IEC standard 317-0-1 Annex C.1 "Method for the calculation of linear resistance" for copper wire and are restricted by a factor of 2.

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0098	58	262.2	291.4	320.5
0.0101		246.9	274.3	301.8
0.0109	57	212.0	235.5	259.1
0.0113		197.2	219.2	241.1
0.0120		174.9	194.3	213.8
0.0125	56	161.2	179.1	197.0
0.0130	55.5	149.0	165.6	182.1
0.0135	55	138.2	153.5	168.9
0.0140		128.5	142.8	157.0
0.0145	54.5	119.8	133.1	146.4
0.0155	54	104.8	116.5	128.1
0.0160		98.38	109.3	120.2
0.0165	53.5	92.51	102.8	113.1
0.0170		87.15	96.83	106.5
0.0175	53	82.24	91.37	100.5
0.0180		77.73	86.37	95.00
0.0185	52.5	73.59	81.76	89.94
0.0190		69.76	77.52	85.27
0.0195	52	66.23	73.59	80.95
0.0200		62.96	69.96	76.95
0.0210	51.5	57.11	63.45	69.80
0.0215		54.48	60.54	66.59
0.0220	51	52.04	57.82	63.60
0.0230	50.5	47.61	52.90	58.19
0.0240		43.72	48.58	53.44
0.0245	50	41.96	46.62	51.28
0.0250		40.30	44.77	49.25
0.0260	49.5	37.26	41.40	45.53
0.0270		34.55	38.39	42.22
0.0275	49	33.30	37.00	40.70
0.0280		32.12	35.69	39.26
0.0290	48.5	29.95	33.27	36.60
0.0300		27.98	31.09	34.20
0.0310	48	26.21	29.12	32.03
0.0320		24.59	27.33	30.06
0.0330	47.5	23.20	25.70	28.19
0.0340		21.86	24.21	26.56
0.0350	47	20.63	22.84	25.06
0.0360		19.50	21.59	23.69
0.0370	46.5	18.46	20.44	22.42
0.0380		17.50	19.38	21.26
0.0381	46.1	17.41	19.28	21.15
0.0390	46.0	16.61	18.40	20.18
0.0400		15.79	17.49	19.19
0.0410	45.5	15.03	16.65	18.26
0.0420		14.32	15.86	17.40

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0430		13.67	15.13	16.60
0.0437		13.23	14.65	16.07
0.0440	45	13.05	14.45	15.86
0.0450		12.48	13.82	15.16
0.0460		11.94	13.22	14.51
0.0470	44.5	11.53	12.67	13.81
0.0480		11.05	12.15	13.24
0.0490		10.61	11.65	12.70
0.0500	44	10.19	11.19	12.20
0.0520	43.5	9.417	10.35	11.28
0.0530		9.065	9.962	10.86
0.0550	43	8.418	9.251	10.08
0.0560		8.120	8.923	9.726
0.0580		7.570	8.318	9.067
0.0600	42.5	7.151	7.773	8.395
0.0620		6.697	7.280	7.862
0.0630	42	6.486	7.050	7.614
0.0650	41.5	6.000	6.623	7.342
0.0670		5.662	6.234	6.890
0.0680		5.504	6.052	6.680
0.0700	41	5.206	5.711	6.287
0.0710		5.066	5.551	6.103
0.0740		4.679	5.110	5.599
0.0750	40.5	4.560	4.975	5.444
0.0780	40	4.229	4.599	5.017
0.0800		4.027	4.372	4.760
0.0830	39.5	3.751	4.062	4.410
0.0850		3.583	3.873	4.197
0.0880	39	3.350	3.614	3.906
0.0900		3.208	3.455	3.729
0.0930	38.5	3.010	3.235	3.484
0.0950		2.889	3.101	3.334
0.1000		2.615	2.798	3.000
0.101	38.0	2.565	2.743	2.939
0.106	37.5	2.335	2.491	2.660
0.110		2.173	2.313	2.465
0.112		2.098	2.231	2.375
0.113	37	2.062	2.192	2.332
0.115		1.993	2.116	2.250
0.118	36.5	1.895	2.010	2.134
0.120		1.834	1.943	2.062
0.125		1.693	1.791	1.896
0.126	36	1.667	1.763	1.865
0.130		1.568	1.656	1.750
0.132		1.522	1.606	1.696
0.134	35.5	1.478	1.558	1.645

Annex A

Electrical Resistance (Continued)

Au Gold

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.138		1.396	1.469	1.549
0.140		1.357	1.428	1.504
0.141	35	1.338	1.408	1.482
0.149	34.5	1.201	1.260	1.324
0.150		1.185	1.244	1.306
0.159	34.0	1.057	1.107	1.160
0.160		1.044	1.093	1.145
0.169	33.5	0.9378	0.9798	1.024
0.170		0.9270	0.9683	1.012
0.179	33	0.8376	0.8734	0.9111
0.180		0.8285	0.8637	0.9008
0.189		0.7526	0.7834	0.8158
0.190	32.5	0.7448	0.7752	0.8071
0.200		0.6733	0.6996	0.7272
0.202	32	0.6602	0.6858	0.7127
0.210		0.6115	0.6345	0.6586
0.212	31.5	0.6002	0.6226	0.6461
0.220		0.5579	0.5782	0.5993
0.222		0.5480	0.5678	0.5884
0.224		0.5384	0.5577	0.5778
0.225	31	0.5291	0.5528	0.5778
0.230		0.5067	0.5290	0.5526
0.236		0.4817	0.5024	0.5243
0.239		0.4698	0.4899	0.5110
0.240	30.5	0.4660	0.4858	0.5067
0.250		0.4300	0.4477	0.4664
0.253	30	0.4201	0.4372	0.4552
0.260		0.3981	0.4140	0.4306
0.265		0.3834	0.3985	0.4143
0.268	29.5	0.3750	0.3896	0.4049

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.270		0.3695	0.3839	0.3989
0.280		0.3440	0.3569	0.3705
0.286	29	0.3299	0.3421	0.3549
0.290		0.3210	0.3327	0.3450
0.295		0.3103	0.3216	0.3333
0.300		0.3002	0.3109	0.3221
0.301	28.5	0.2982	0.3089	0.3199
0.315		0.2726	0.2820	0.2918
0.319	28	0.2659	0.2750	0.2844
0.335		0.2414	0.2493	0.2576
0.339	27.5	0.2358	0.2435	0.2515
0.345		0.2278	0.2351	0.2427
0.350		0.2214	0.2284	0.2357
0.355		0.2153	0.2220	0.2291
0.360	27	0.2083	0.2159	0.2239
0.375		0.1921	0.1990	0.2062
0.380	26.5	0.1872	0.1938	0.2007
0.383		0.1843	0.1908	0.1975
0.390		0.1778	0.1840	0.1904
0.400		0.1691	0.1749	0.1809
0.402	26	0.1675	0.1732	0.1791
0.420		0.1536	0.1586	0.1639
0.425		0.1500	0.1549	0.1600
0.427	25.5	0.1487	0.1535	0.1585
0.450		0.1340	0.1382	0.1425
0.453	25	0.1323	0.1364	0.1406
0.475		0.1204	0.1240	0.1278
0.481	24.5	0.1175	0.1210	0.1246
0.500		0.1088	0.1119	0.1152
0.508	24	0.1050	0.1084	0.1120