ELEKTRISOLA

Ag99.99

Pure Silver

General Description

ELEKTRISOLA 4N pure silver wire consists of 99.99% silver, which has the highest possible conductivity of all wire. Because of the low resistance, pure silver wire is used in electro technical applications with the highest requirements. Other advantages of pure silver wire include electrochemical potential and corrosion resistance. These features are also very important in electrochemical applications. 4N pure silver wire is available with all insulations and self-bonding enamels. Besides enameled pure silver wire, Elektrisola also produces bare wires.

Features

- Corrosion resistant
- Highest possible conductivity

Applications

- pH-Sensors
- Others

Electrical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
χ	Conductivity		62.5		S*m/mm²
ρ	Resistivity		0.016		Ω*mm²/m
α	Thermal coefficient of resistance	3800	3950	4100	10E-6/K
	Resistance (IACS)		108		%

Mechanical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
σ_T	Tensile strength	170	200	220	N/mm²
$\sigma_{Y1\%}$	Yield strength at 1%	100	130	150	N/mm²
ε	Elongation	15	30	40	%

Physical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
ρ	Density		10.5		kg/dm³

Note 1: Unless otherwise specified, all limits are guaranteed for annealed and enameled wire at T_A = 20°C and measured according international standard IEC 851 as far as applicable.

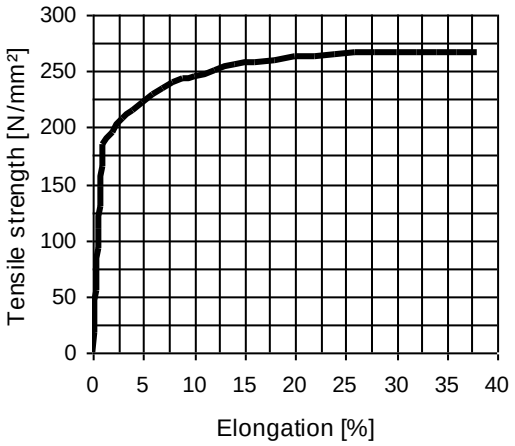
Note 2: Typical Values represent the most likely parametric norm.

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

Typical Performance Characteristics

Tensile strength vs. elongation

(Diameter: 0.100mm)



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	190.9	212.1	233.3
0.0101		179.7	199.7	219.7
0.0109	57	154.3	171.5	188.6
0.0113		143.6	159.5	175.5
0.0120		127.3	141.5	155.6
0.0125	56	117.3	130.4	143.4
0.0130	55.5	108.5	120.5	132.6
0.0135	55	100.6	111.8	123.0
0.0140		93.54	103.9	114.3
0.0145	54.5	87.20	96.89	106.6
0.0155	54	76.31	84.79	93.27
0.0160		71.62	79.58	87.54
0.0165	53.5	67.34	74.83	82.31
0.0170		63.44	70.49	77.54
0.0175	53	59.87	66.52	73.17
0.0180		56.59	62.88	69.16
0.0185	52.5	53.57	59.52	65.48
0.0190		50.79	56.43	62.07
0.0195	52	48.22	53.57	58.93
0.0200		45.84	50.93	56.02
0.0210	51.5	41.58	46.19	50.81
0.0215		39.66	44.07	48.48
0.0220	51	37.88	42.09	46.30
0.0230	50.5	34.66	38.51	42.36
0.0240		31.83	35.37	38.90
0.0245	50	30.55	33.94	37.33
0.0250		29.34	32.59	35.85
0.0260	49.5	27.12	30.14	33.15
0.0270		25.15	27.94	30.74
0.0275	49	24.24	26.94	29.63
0.0280		23.39	25.98	28.58
0.0290	48.5	21.80	24.22	26.65
0.0300		20.37	22.64	24.90
0.0310	48	19.08	21.20	23.32
0.0320		17.90	19.89	21.88
0.0330	47.5	16.89	18.71	20.52
0.0340		15.91	17.62	19.33
0.0350	47	15.02	16.63	18.24
0.0360		14.19	15.72	17.24
0.0370	46.5	13.44	14.88	16.32
0.0380		12.74	14.11	15.48
0.0381	46.1	12.67	14.03	15.40
0.0390	46.0	12.09	13.39	14.69
0.0400		11.50	12.73	13.97
0.0410	45.5	10.94	12.12	13.29
0.0420		10.43	11.55	12.67

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0430		9.949	11.02	12.09
0.0437		9.633	10.67	11.70
0.0440	45	9.502	10.52	11.54
0.0450		9.084	10.06	11.04
0.0460		8.694	9.628	10.56
0.0470	44.5	8.392	9.222	10.05
0.0480		8.046	8.842	9.638
0.0490		7.721	8.485	9.248
0.0500	44	7.415	8.149	8.882
0.0520	43.5	6.856	7.534	8.212
0.0530		6.600	7.252	7.905
0.0550	43	6.128	6.734	7.341
0.0560		5.911	6.496	7.081
0.0580		5.511	6.056	6.601
0.0600	42.5	5.206	5.659	6.112
0.0620		4.876	5.300	5.724
0.0630	42	4.722	5.133	5.543
0.0650	41.5	4.368	4.822	5.345
0.0670		4.122	4.538	5.016
0.0680		4.007	4.406	4.863
0.0700	41	3.790	4.158	4.577
0.0710		3.688	4.041	4.443
0.0740		3.407	3.720	4.076
0.0750	40.5	3.320	3.622	3.963
0.0780	40	3.078	3.348	3.653
0.0800		2.932	3.183	3.465
0.0830	39.5	2.731	2.957	3.210
0.0850		2.608	2.820	3.056
0.0880	39	2.439	2.631	2.844
0.0900		2.335	2.515	2.714
0.0930	38.5	2.192	2.355	2.537
0.0950		2.103	2.257	2.427
0.1000		1.904	2.037	2.184
0.101	38.0	1.867	1.997	2.139
0.106	37.5	1.700	1.813	1.937
0.110		1.582	1.684	1.795
0.112		1.527	1.624	1.729
0.113	37	1.501	1.595	1.698
0.115		1.451	1.540	1.638
0.118	36.5	1.380	1.463	1.554
0.120		1.335	1.415	1.501
0.125		1.233	1.304	1.380
0.126	36	1.214	1.283	1.358
0.130		1.142	1.205	1.274
0.132		1.108	1.169	1.235
0.134	35.5	1.076	1.135	1.197

Annex A

Electrical Resistance (Continued)

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.138		1.016	1.070	1.127
0.140		0.9877	1.039	1.095
0.141	35	0.9740	1.025	1.079
0.149	34.5	0.8742	0.9176	0.9639
0.150		0.8628	0.9054	0.9508
0.159	34.0	0.7696	0.8058	0.8443
0.160		0.7602	0.7958	0.8335
0.169	33.5	0.6827	0.7133	0.7456
0.170		0.6749	0.7049	0.7367
0.179	33	0.6098	0.6358	0.6633
0.180		0.6031	0.6288	0.6558
0.189		0.5479	0.5703	0.5939
0.190	32.5	0.5422	0.5643	0.5875
0.200		0.4901	0.5093	0.5294
0.202	32	0.4806	0.4993	0.5188
0.210		0.4452	0.4619	0.4795
0.212	31.5	0.4369	0.4533	0.4704
0.220		0.4062	0.4209	0.4363
0.222		0.3990	0.4134	0.4284
0.224		0.3920	0.4060	0.4207
0.225	31	0.3852	0.4024	0.4207
0.230		0.3689	0.3851	0.4023
0.236		0.3507	0.3658	0.3817
0.239		0.3421	0.3566	0.3720
0.240	30.5	0.3393	0.3537	0.3689
0.250		0.3131	0.3259	0.3395
0.253	30	0.3058	0.3183	0.3314
0.260		0.2898	0.3014	0.3135
0.265		0.2791	0.2901	0.3016
0.268	29.5	0.2730	0.2836	0.2948

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.270		0.2690	0.2794	0.2904
0.280		0.2504	0.2598	0.2697
0.286	29	0.2402	0.2491	0.2584
0.290		0.2337	0.2422	0.2512
0.295		0.2259	0.2341	0.2426
0.300		0.2186	0.2264	0.2345
0.301	28.5	0.2171	0.2249	0.2329
0.315		0.1985	0.2053	0.2124
0.319	28	0.1936	0.2002	0.2071
0.335		0.1758	0.1815	0.1875
0.339	27.5	0.1717	0.1773	0.1831
0.345		0.1658	0.1712	0.1767
0.350		0.1612	0.1663	0.1716
0.355		0.1567	0.1616	0.1668
0.360	27	0.1516	0.1572	0.1630
0.375		0.1399	0.1449	0.1501
0.380	26.5	0.1363	0.1411	0.1461
0.383		0.1342	0.1389	0.1438
0.390		0.1295	0.1339	0.1386
0.400		0.1231	0.1273	0.1317
0.402	26	0.1219	0.1261	0.1304
0.420		0.1118	0.1155	0.1193
0.425		0.1092	0.1128	0.1165
0.427	25.5	0.1082	0.1117	0.1154
0.450		0.09756	0.1006	0.1038
0.453	25	0.09629	0.09927	0.1024
0.475		0.08766	0.09029	0.09301
0.481	24.5	0.08551	0.08805	0.09068
0.500		0.07920	0.08149	0.08385
0.508	24	0.07645	0.07894	0.08153