

Plated Wire

MWS offers a complete line of electroplated wire in round and ribbon shapes. Wires inventoried include those meeting QQ-W-343, AA59551, Mil Std 1276, ASTM B298, ASTM B355, and ASTM B488 requirements. These wires were developed for applications where severe operating environments may degrade conventional conductor materials. Conventional copper wires are plated with gold, silver, or nickel in a variety of plating thicknesses, and then are film-insulated. At elevated temperatures, these wires can operate for extremely long periods of time, as the plated constructions prevent high-temperature chemical migration and conductor oxidation. Tin and copper plated wires are insulated for lower temperature applications. Sizes 14-56 AWG can be produced in single end, parallel bonded, and twisted constructions. Also offered is braided and stranded constructions.

Plating Finishes - Gold, Silver, Nickel, Tin, Tin/Lead (60/40, 70/30, 90/10)

Surface Conditions and Treatments - Bright, semi-bright, or matte finish

Conductor Materials - Copper, Nickel, Dumet, Copper-Nickel Alloys, Nickel-Iron Alloys, Nickel-Chromium Alloys, Beryllium Copper, Phosphor Bronze, and Brass, along with a variety of other metals and alloys.

Size Range Capabilities - Round: .125" -.0007". Flat/square/rectangular: thickness .0005" and larger, widths up to .125"

Plated Copper Wire Data

SIZE (AWG)	DIAMETER (INCHES)	CIRCULAR MILS	RESISTANCE (OHMS PER 1000 FT. AT 20°C)	POUNDS PER 1000 FT.	THICKNESS OF COATING (MICROINCHES)											
					SILVER PLATED							NICKEL PLATED				
					NOMINAL	NOMINAL	NOMINAL		1.25%	2%	2.5%	3%	4%	5%	6.1%	2%
14	0.0641	4,110	2.48	12.4	170	272	343	417	551	692	846	322	647	1,142	1,645	4,670
15	0.0571	3,260	3.13	9.87	151	243	305	371	491	617	754	282	577	1,018	1,465	4,160
16	0.0508	2,580	3.95	7.81	135	216	272	330	437	549	671	255	513	905	1,304	3,700
17	0.0453	2,050	4.98	6.21	120	193	242	294	390	489	598	228	458	807	1,162	3,300
18	0.0403	1,620	6.30	4.92	107	171	216	262	347	435	532	202	407	718	1,034	2,930
19	0.0359	1,290	7.91	3.90	95	153	192	233	309	388	474	180	363	640	921	2,610
20	0.0320	1,020	10.0	3.10	85	136	171	208	247	346	422	161	323	570	821	2,330
21	0.0285	812	12.6	2.46	76	121	152	185	245	308	376	143	288	508	731	2,070
22	0.0253	640	15.9	1.94	67	108	135	164	218	273	334	127	255	451	649	1,850
23	0.0226	511	20.0	1.55	60	96	121	147	194	244	293	114	228	403	580	1,640
24	0.0201	404	25.2	1.22	53	85	108	131	173	217	265	101	203	358	516	1,460
25	0.0179	320	31.9	0.970	47	76	96	116	154	193	236	90	181	319	459	1,300
26	0.0159	253	40.3	0.765	42	68	85	103	137	172	210	80	161	283	408	1,160
27	0.0142	202	50.5	0.610	38	60	76	92	122	153	187	71	143	253	364	1,030
28	0.0126	159	64.2	0.481	33	54	67	82	108	136	166	63	127	224	323	920
29	0.0113	128	79.7	0.387	30	48	60	73	97	122	149	57	114	201	290	820
30	0.0100	100	102	0.303	27	43	54	65	86	108	132	50	101	178	256	730
31	0.0089	79.2	129	0.240	24	38	48	58	77	96	117	45	90	159	228	650
32	0.0080	64.0	159	0.194	21	34	43	52	69	86	106	40	81	143	205	580
33	0.0071	50.4	202	0.153	19	30	38	46	61	77	94	36	72	126	182	520
34	0.0063	39.7	257	0.120	17	27	34	41	54	68	83	32	64	112	162	460
35	0.0056	31.4	325	0.0949	15	24	30	36	48	60	74	28	57	100	144	410
36	0.0050	25.0	408	0.0757	13	21	27	33	43	54	66	25	50	89	128	360
37	0.0045	20.2	505	0.0613	12	19	24	29	39	48	59	23	45	80	116	320
38	0.0040	16.0	638	0.0484	11	17	21	26	34	43	53	20	40	71	103	290
39	0.0035	12.2	836	0.0371	9	15	19	23	30	38	46	18	35	62	90	260
40	0.0031	9.61	1061	0.0291	8	13	17	20	27	33	41	16	31	55	80	230

Precious Metals

MWS inventories bare pure gold, silver and platinum from AWG 16 and finer, as well as rolled rectangular sizes. These precious metals can be insulated and produced in Multifilar® and Twistite™ constructions.

Properties of Specialty Metals

METAL	ATOMIC SYMBOL	ELECTRICAL RESISTIVITY (OHMS/CMF AT 20°C)	TEMPERATURE COEFFICIENT of RESISTANCE (0-100°C)	COEFFICIENT OF LINEAR EXPANSION (µm/m AT 20°C)	TENSILE STRENGTH (KPSI) ANNEALED	DENSITY (lb/in ³)	MELTING POINT APPROX (°C)
Gold	Au	13.31	0.00372	14.2	30-32	0.698	1,064
Platinum	Pt	63.91	0.00393	8.9	18-24	0.775	1,769
Silver	Ag	9.56	0.00382	18.9	18-27	0.379	962

