

## Conductivity and Resistivity Values for Copper & Alloys

Material	Conductivity		Resistivity	Reference	Notes
	(% IACS)	(Siemens/m)	(Ohm-m)	(See End Note)	
<b>Copper and Copper Alloys by Copper Alloy Number</b>					
Pure (annealed)	100.00	5.800E+07	1.724E-08	ECTM	
C10100, C10200	101.00		1.710E-08	MHASM2	
C10300-O61	99.00		1.740E-08	MHASM2	
C10400, C10500, C10700 (O61 temper)	100.00		1.720E-08	MHASM2	
C10800-O61	92.00		1.870E-08	MHASM2	
C11000-O60	100-101.5		1.700E-8--1.724E-8	MHASM2	
C11000-H14	97.00		1.780E-08	MHASM2	
C11100	100.00		1.720E-08	MHASM2	
C11300, C11400, C11500, C11600	100.00		1.720E-08	MHASM2	
C12500, C12700, C12800, C12900, C13000 (annealed)	98.00		1.760E-08	MHASM2	
C14300	96.00		1.800E-08	MHASM2	
C14310	85.00		2.030E-08	MHASM2	
C14500	93.00		1.860E-08	MHASM2	
C14700-O61	95.00		1.810E-08	MHASM2	
C15000	93.00		1.860E-08	MHASM2	
C15100 (annealed)	95.00		1.810E-08	MHASM2	
C15100 (rolled)	90.00		1.920E-08	MHASM2	
C15500 (annealed)	91.00		1.900E-08	MHASM2	
C15710	90.00		1.920E-08	MHASM2	
C15720	89.00		1.940E-08	MHASM2	
C16200	90.00		1.920E-08	MHASM2	
C17000-TB00 (strip)	28-33		5.2E-8--6.2E-8	MHASM2	resistivity converted from conductivity
C17000-TB00 (rod, bar, plate tubing, forgings)	17-19		9.1E-8--1.0E-7	MHASM2	resistivity converted from conductivity
C17000-TB00 (billet)	13-18		9.6E-8--1.3E-7	MHASM2	resistivity converted from conductivity
C17000-TD01 (strip)	29-34		5.0E-8--5.9E-8	MHASM2	resistivity converted from conductivity
C17000-TD02 (strip)	32-38		4.5E-8--5.4E-8	MHASM2	resistivity converted from conductivity
C17000-TD04 (strip)	35-39		4.4E-8--4.9E-8	MHASM2	resistivity converted from conductivity
C17000-TD04 (rod, bar, plate tubing)	15-17		1.0E-7--1.1E-7	MHASM2	resistivity converted from conductivity
C17000-TF00 (strip)	35-39		4.8E-8--4.8E-8	MHASM2	resistivity converted from conductivity
C17000-TF00 (rod, bar, plate tubing, forgings)	22-25		6.9E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17000-TF00 (billet)	18-25		6.9E-8--9.6E-8	MHASM2	resistivity converted from conductivity
C17000-TH01 (strip)	36-41		4.1E-8--4.8E-8	MHASM2	resistivity converted from conductivity
C17000-TH02 (strip)	36-42		3.8E-8--4.5E-8	MHASM2	resistivity converted from conductivity
C17000-TH04 (strip)	38-45		4.7E-8--5.2E-8	MHASM2	resistivity converted from conductivity
C17000-TH04 (rod, bar, plate tubing)	22-25		6.9E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17000-TM00 (strip)	33-37		4.5E-8--5.1E-8	MHASM2	resistivity converted from conductivity
C17000-TM01 (strip)	34-38		4.4E-8--4.9E-8	MHASM2	resistivity converted from conductivity
C17000-TM02 (strip)	35-39		4.3E-8--4.8E-8	MHASM2	resistivity converted from conductivity
C17000-TM04 (strip)	36-40		4.1E-8--4.7E-8	MHASM2	resistivity converted from conductivity
C17000-TM06 (strip)	37-42		4.1E-8--4.7E-8	MHASM2	resistivity converted from conductivity
C17000-TM08 (strip)	33-45		3.8E-8--5.2E-8	MHASM2	resistivity converted from conductivity
C17000 as-cast (billet)	16-22		7.8E-8--1.1E-7	MHASM2	resistivity converted from conductivity

C17000 cast and aged (billet)	18-23		7.5E-8--9.6E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TB00	17-19		9.1E-8--1.0E-7	MHASM2	resistivity converted from conductivity
C17200, C17300-TB00 (billets)	25-45		3.8E-8--6.9E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TD01	16-18		9.6E-8--1.1E-7	MHASM2	resistivity converted from conductivity
C17200, C17300-TD02	15-17		1.0E-7--1.1E-7	MHASM2	resistivity converted from conductivity
C17200, C17300-TD04	15-17		1.0E-7--1.1E-7	MHASM2	resistivity converted from conductivity
C17200, C17300-TF00	22-25		6.9E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TF00 (billets)	1.0-3.0		5.7E-7--1.7E-6	MHASM2	resistivity converted from conductivity
C17200, C17300-TH01	22-25		6.9E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TH02	22-25		6.9E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TH04	22-25		6.9E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TM00	20-28		6.2E-8--8.6E-8	MHASM2	resistivity converted from conductivity
C17200, C17300-TM01	20-28		6.2E-8--8.6E-9	MHASM2	resistivity converted from conductivity
C17200, C17300-TM02	20-28		6.2E-8--8.6E-10	MHASM2	resistivity converted from conductivity
C17200, C17300-TM04	20-28		6.2E-8--8.6E-11	MHASM2	resistivity converted from conductivity
C17200, C17300-TM06	20-28		6.2E-8--8.6E-12	MHASM2	resistivity converted from conductivity
C17200, C17300-TM08	20-28		6.2E-8--8.6E-13	MHASM2	resistivity converted from conductivity
C17200, C17300 as-cast (billet)	15-30		5.7E-8--1.1E-7	MHASM2	resistivity converted from conductivity
C17200, C17300 cast and aged (billet)	10.0-20		8.6E-8--1.7E-7	MHASM2	resistivity converted from conductivity
C17410	45.00		3.800E-08	MHASM2	
C17500-TB00	20-30		5.7E-8--8.6E-8	MHASM2	resistivity converted from conductivity
C17500-H04	20-30		5.7E-8--8.6E-9	MHASM2	resistivity converted from conductivity
C17500-TF00	45-60		2.9E-8--3.8E-8	MHASM2	resistivity converted from conductivity
C17500-TH04	50-60		2.9E-8--3.4E-8	MHASM2	resistivity converted from conductivity
C17500-HTR	45-60		2.9E-8--3.8E-8	MHASM2	resistivity converted from conductivity
C17500-HTC	60 min		2.9E-8 max	MHASM2	resistivity converted from conductivity

C17600-TB00	20-30		5.7E-8--8.6E-9	MHASM2	resistivity converted from conductivity
C17600-TB00 (billet)	22-28		6.2E-8--7.8E-8	MHASM2	resistivity converted from conductivity
C17600-H04	20-30		5.7E-8--8.6E-9	MHASM2	resistivity converted from conductivity
C17600-TF00	45-60		2.9E-8--3.8E-8	MHASM2	resistivity converted from conductivity
C17600-TF00 (billet, forged products)	50-60		2.9E-8--3.4E-8	MHASM2	resistivity converted from conductivity
C17600-TH04	50-60		2.9E-8--3.4E-8	MHASM2	resistivity converted from conductivity
C17600 as-cast (billet)	32-37		4.7E-8--5.4E-8	MHASM2	resistivity converted from conductivity
C17600 cast and aged (billet)	40-50		3.4E-8--4.3E-8	MHASM2	resistivity converted from conductivity
C18100 (annealed)	80.00		2.170E-08	MHASM2	
C18200, C18400, C18500-TB00	40.00		4.310E-08	MHASM2	resistivity converted from conductivity
C18200, C18400, C18500-TH04	80.00		2.163E-08	MHASM2	
C18700	96.00		7.790E-08	MHASM2	
C19200 (strip)	60.00		2.880E-08	MHASM2	
C19200 (tubing)	50.00		3.450E-08	MHASM2	
C19210	80.00		2.160E-08	MHASM2	
C19400-O60	40.00		4.310E-08	MHASM2	
C19400-H14	50.00		3.450E-08	MHASM2	
C19400 (all other tempers)	65 nominal		2.26e-8 nominal	MHASM2	
C19500	50.00		3.440E-08	MHASM2	
C19520	40.00		4.930E-08	MHASM2	
C19700	80.00		2.160E-08	MHASM2	
C21000 (annealed)	56.00		3.100E-08	MHASM2	
C22000 (annealed)	44.00		3.910E-08	MHASM2	
C22600 (annealed)	40.00		4.300E-08	MHASM2	
C23000 (annealed)	37.00		4.700E-08	MHASM2	
C24000-O61	32.00		5.400E-08	MHASM2	
C26000-O61	28.00		6.200E-08	MHASM2	
C26800, C27000 (annealed)	27.00		6.400E-08	MHASM2	
C28000	28.00		6.160E-08	MHASM2	
C31400	42.00		4.100E-08	MHASM2	
C31600	32.00		5.400E-08	MHASM2	
C33000	26.00		6.600E-08	MHASM2	
C33200-O61	26.00		6.600E-08	MHASM2	
C33500	26.00		6.600E-08	MHASM2	
C34000-O61	26.00		6.600E-08	MHASM2	
C34200, C35300-O61	26.00		6.600E-08	MHASM2	
C34900	26.00		6.600E-08	MHASM2	
C35000	26.00		6.600E-08	MHASM2	
C35600-O61	26.00		6.600E-08	MHASM2	
C36000-O61	26.00		6.600E-08	MHASM2	
C36500, C36600, C36700, C36800-O61	28.00		6.200E-08	MHASM2	
C37000-O61	27.00		6.390E-08	MHASM2	
C37700	27.00		6.400E-08	MHASM2	
C38500-O61	28.00		6.200E-08	MHASM2	

C40500	41.00		4.200E-08	MHASM2	
C40800	37.00		4.660E-08	MHASM2	
C41100	32.00		5.400E-08	MHASM2	
C41500	28.00		6.200E-08	MHASM2	
C41900	22.00		7.800E-08	MHASM2	
C42200	31.00		5.500E-08	MHASM2	
C42500	28.00		6.200E-08	MHASM2	
C43000	27.00		6.400E-08	MHASM2	
C43400	31.00		5.600E-08	MHASM2	
C43500	28.00		6.200E-08	MHASM2	
C44300, C44400, C44500	25.00		6.900E-08	MHASM2	
C46400, C45600, C46600, C46700 (annealed)	26.00		6.630E-08	MHASM2	
C48200	26.00		6.630E-08	MHASM2	
C48500	26.00		6.630E-08	MHASM2	
C50500	48.00		3.600E-08	MHASM2	
C50710	30.00		5.740E-08	MHASM2	
C51000	20.00		8.700E-08	MHASM2	
C51100	20.00		8.700E-08	MHASM2	
C52100	13.00		1.330E-07	MHASM2	
C52400	11.00		1.570E-07	MHASM2	
C54400	19.00		9.100E-08	MHASM2	
C60600	17.00		1.000E-07	MHASM2	
C60800	17.00		1.000E-07	MHASM2	
C61000	15.00		1.150E-08	MHASM2	
C61300	12.00		1.440E-07	MHASM2	
C61400	14.00		1.230E-07	MHASM2	
C61500	12.60		1.370E-07	MHASM2	
C62300	12.00		1.440E-07	MHASM2	
C62400	12.00		1.440E-07	MHASM2	
C62500	10.00		1.720E-07	MHASM2	
C63000	9.00		1.920E-06	MHASM2	
C63200	7.00		2.460E-08	MHASM2	
C63600	12.00		1.430E-07	MHASM2	
C63800	10.00		1.740E-07	MHASM2	
C65100	12.00		1.440E-07	MHASM2	
C65400	7.00		2.460E-07	MHASM2	
C65500	7.00		2.460E-07	MHASM2	
C66400-O61	30.00		5.750E-08	MHASM2	
C68800-O61	18.00		9.600E-08	MHASM2	
C68800-H08	16.60		1.040E-07	MHASM2	
C69000-O61	18.00		9.600E-08	MHASM2	
C69400	6.20		2.800E-07	MHASM2	
C70250	35-40		4.31E-8--4.93E-8	MHASM2	
C70400	14.00		1.200E-07	MHASM2	
C70600	9.10		1.900E-07	MHASM2	
C71000-O61	6.50		2.650E-07	MHASM2	
C71500-O61	4.60		3.750E-07	MHASM2	
C71900	4.40		3.950E-07	MHASM2	
C72200	6.53		2.640E-07	MHASM2	
C72500	11.00		1.570E-07	MHASM2	
C74500	9.00		1.920E-07	MHASM2	
C75200	6.00		2.870E-07	MHASM2	
C75400	7.00		2.460E-07	MHASM2	
C75700	8.00		2.160E-07	MHASM2	
C77000	5.50		3.140E-07	MHASM2	

C78200	10.90		1.600E-07	MHASM2	
C81100	92.00		1.874E-08	MHASM2	resistivity converted from conductivity
C81300	60.00		2.874E-08	MHASM2	resistivity converted from conductivity
C81500 (solution heat treated)	40-50		3.830E-08	MHASM2	
C81500 (precipitation hardened)	80-90		2.100E-08	MHASM2	
C81800	48.00		3.590E-08	MHASM2	
C82000	48.00		3.590E-08	MHASM2	
C82200	48.00		3.590E-08	MHASM2	
C82400	25.00		6.900E-08	MHASM2	
C82500	20.00		8.620E-08	MHASM2	
C82600	19.00		9.070E-08	MHASM2	
C82800	18.00		9.580E-08	MHASM2	
C83300	32.00		5.388E-08	MHASM2	resistivity converted from conductivity
C83600	15.00		1.149E-07	MHASM2	resistivity converted from conductivity
C83800	15.00		1.149E-07	MHASM2	resistivity converted from conductivity
C84400	16.40		1.051E-07	MHASM2	resistivity converted from conductivity
C84800	16.40		1.051E-07	MHASM2	resistivity converted from conductivity
C85200	18.60		9.269E-08	MHASM2	resistivity converted from conductivity
C85400	19.60		8.796E-08	MHASM2	resistivity converted from conductivity
C85700, C85800	22.00		7.837E-08	MHASM2	resistivity converted from conductivity
C86100, C86200	7.50		2.299E-07	MHASM2	resistivity converted from conductivity
C86300	9.00		1.916E-07	MHASM2	resistivity converted from conductivity
C86400	22.00		7.837E-08	MHASM2	resistivity converted from conductivity
C86500	20.50		8.410E-08	MHASM2	resistivity converted from conductivity
C86700	32.00		5.388E-08	MHASM2	resistivity converted from conductivity
C86800	9.00		1.916E-07	MHASM2	resistivity converted from conductivity
C87300 (formerly C87200)	6.70		2.573E-07	MHASM2	resistivity converted from conductivity
C87600	6.00		2.874E-07	MHASM2	resistivity converted from conductivity
C87500, C87800	6.70		2.840E-07	MHASM2	
C87900	15.00		1.149E-07	MHASM2	resistivity converted from conductivity

C90300	12.00		1.437E-07	MHASM2	resistivity converted from conductivity
C90500	11.00		1.567E-07	MHASM2	resistivity converted from conductivity
C90700	9.60		1.500E-08	MHASM2	
C91700	10.00		1.724E-07	MHASM2	resistivity converted from conductivity
C92200	14.30		1.200E-07	MHASM2	
C92300	12.00		1.437E-07	MHASM2	resistivity converted from conductivity
C92600	9.00		1.916E-07	MHASM2	resistivity converted from conductivity
C92700	11.00		1.567E-07	MHASM2	resistivity converted from conductivity
C92900	9.20		1.874E-07	MHASM2	resistivity converted from conductivity
C93200	12.00		1.437E-07	MHASM2	resistivity converted from conductivity
C93400	12.00		1.437E-07	MHASM2	resistivity converted from conductivity
C93500	15.00		1.149E-07	MHASM2	resistivity converted from conductivity
C93700	10.14		1.700E-07	MHASM2	conductivity converted from resistivity
C93800	11.50		1.499E-07	MHASM2	resistivity converted from conductivity
C93900	11.50		1.499E-07	MHASM2	resistivity converted from conductivity
C94300	9.00		1.916E-07	MHASM2	resistivity converted from conductivity
C94500	10.00		1.724E-07	MHASM2	resistivity converted from conductivity
C95200	12.00		1.440E-07	MHASM2	
C95300	13.00		1.330E-07	MHASM2	
C95400	13.00		1.330E-07	MHASM2	
C95500	8.50		2.030E-07	MHASM2	
C95600	8.50		2.028E-07	MHASM2	resistivity converted from conductivity
C95700	3.10		5.560E-07	MHASM2	
C95800	7.10		2.430E-07	MHASM2	
C96200	11.00		1.567E-07	MHASM2	resistivity converted from conductivity
C96400	5.00		3.448E-07	MHASM2	resistivity converted from conductivity
C96600	4.30		4.000E-09	MHASM2	
C97300 (as-cast)	5.70		3.025E-07	MHASM2	resistivity converted from conductivity
C97600 (as-cast)	5.00		3.448E-07	MHASM2	resistivity converted from conductivity
C97800 (as-cast)	4.50		3.831E-07	MHASM2	resistivity converted from conductivity
C99400-TF00	16.80		1.026E-07	MHASM2	resistivity converted from conductivity
C99500	13.70		1.258E-07	MHASM2	resistivity converted from conductivity
C99700	3.00		5.747E-07	MHASM2	resistivity converted from conductivity
C99750	2.00		8.621E-07	MHASM2	resistivity converted from conductivity
Deoxidized (Annealed)	85.00	4.930E+07	2.028E-08	CSNDT	
Electrolytic Tough Pitch (Annealed)	101.00	5.858E+07	1.707E-08	CSNDT	
Copper 70%, Nickel 30%	4.50	2.610E+06	3.831E-07	ECTM	
Copper 90%, Nickel 10%	9.74	5.647E+06	1.771E-07	ECT	
Cupro - Nickel 30%	4.60	2.668E+06	3.748E-07	CSNDT	

<b>Beryllium Copper</b>					
Beryllium Copper, Cond. "A"	17.00	9.860E+06	1.014E-07	CSNDT	
Beryllium Copper, Cond. At	21.00	1.218E+07	8.210E-08	CSNDT	
Beryllium Copper 21C	20.00		8.620E-04	MHASM2	
Beryllium Copper Nickel 72C	43.00		4.000E-03	MHASM2	
<b>Brass</b>					
Admiralty Brass	24.00	1.392E+07	7.184E-08	ECTM	
Admiralty Metal (Annealed)	24.60	1.427E+07	7.009E-08	CSNDT	
Aluminum Brass (Annealed)	23.00	1.334E+07	7.496E-08	CSNDT	
Cartridge (Annealed)	28.00	1.624E+07	6.158E-08	CSNDT	
High Strength Yellow	12.00	6.960E+06	1.437E-07	CSNDT	
Leaded Naval (Annealed)	26.00	1.508E+07	6.631E-08	CSNDT	
Leaded Semi Red	18.00	1.044E+07	9.579E-08	CSNDT	
Leaded Yellow	25.00	1.450E+07	6.897E-08	CSNDT	
Low (Annealed)	32.00	1.856E+07	5.388E-08	CSNDT	
Low Leaded (Annealed)	26.00	1.508E+07	6.631E-08	CSNDT	
Naval (Annealed)	26.00	1.508E+07	6.631E-08	CSNDT	
Red (Annealed)	37.00	2.146E+07	4.660E-08	CSNDT	
Yellow (Annealed)	27.00	1.566E+07	6.386E-08	CSNDT	
Aluminum Brass (Annealed)	23.00	1.334E+07	7.496E-08	CSNDT	
<b>Bronze</b>					
Commercial (Annealed)	44.00	2.552E+07	3.918E-08	CSNDT	
Commercial Leaded	42.00	2.436E+07	4.105E-08	CSNDT	
Leaded Tin	14.00	8.120E+06	1.232E-07	CSNDT	
Leaded Tin Bearing	11.00	6.380E+06	1.567E-07	CSNDT	
Manganese Bronze (Annealed)	24.00	1.392E+07	7.184E-08	CSNDT	
1.25% Phos. Grade E	48.00	2.784E+07	3.592E-08	CSNDT	
5% Phos. Grade A	18.00	1.044E+07	9.579E-08	CSNDT	
8% Phos. Grade C	13.00	7.540E+06	1.326E-07	CSNDT	
10% Phos. Grade D	11.00	6.380E+06	1.567E-07	CSNDT	
<b>Aluminum Bronze</b>					
Aluminum - Bronze	14.00	8.120E+06	1.232E-07	CSNDT	
5% Aluminum (Annealed)	17.50	1.015E+07	9.852E-08	CSNDT	
10% Aluminum (Annealed)	12.60	7.308E+06	1.368E-07	CSNDT	
<b>Silicon Bronze</b>					
Silicon Bronze, Type A (Annealed)	7.00	4.060E+06	2.463E-07	CSNDT	
Silicon Bronze, Type B (Annealed)	12.00	6.960E+06	1.437E-07	CSNDT	

CSNDT=CSNDT compiled by Eddy Current Technology Incorporated

ECT=Eddy Current Technology Incorporated

ECTM=Eddy Current Testing Manual on Eddy Current Method compiled by Eddy Current Technology Incorporated

MHASM2=ASM Metals Handbook--Volume 2, Tenth Edition