Resistivity and Temperature Coefficient at 20 C

Index

Tables

Reference
Giancoli

Material	Resistivity ϱ (ohm m)		Temperature coefficient α per degree C	Conductivity σ x 10^7 /Ωm	Ref
Silver	1.59	x10^{-8}	.0038	6.29	3
Copper	1.68	x10^{-8}	.00386	5.95	3
Copper, annealed	1.72	x10^{-8}	.00393	5.81	2
Aluminum	2.65	x10^{-8}	.00429	3.77	1
Tungsten	5.6	x10^{-8}	.0045	1.79	1
Iron	9.71	x10^{-8}	.00651	1.03	1
Platinum	10.6	x10^{-8}	.003927	0.943	1
Manganin	48.2	x10^{-8}	.000002	0.207	1
Lead	22	x10^{-8}	...	0.45	1
Mercury	98	x10^{-8}	.0009	0.10	1
Nichrome (Ni,Fe,Cr alloy)	100	x10^{-8}	.0004	0.10	1
Constantan	49	x10^{-8}	...	0.20	1
Carbon* (graphite)	3-60	x10^{-5}	-.0005	...	1
Germanium*	1-500	x10^{-3}	-.05	...	1
Silicon*	0.1-60	...	-.07	...	1
Glass	1-10000	x10^{9}	...	...	1
Quartz (fused)	7.5	x10^{17}	...	...	1
Hard rubber	1-100	x10^{13}	...	...	1

*The resistivity of semiconductors depends strongly on the presence of impurities in the material, a fact which makes them useful in solid state electronics.

References:

1. Giancoli, Douglas C., Physics, 4th Ed, Prentice Hall, (1995).

2. CRC Handbook of Chemistry and Physics, 64th ed.

3. Wikipedia, Electrical resistivity and conductivity.