



Melting Points & Density of Various Metals & Alloys

Metal	Melting Point		Specific Gravity	Density in Tr. Ozs. per Cu. In.
	°F	°C		
Aluminum	1220	660	2.70	1.423
Antimony	1167	630	6.62	3.488
Beryllium	2340	1282	1.82	.959
Bismuth	520	271	9.80	5.163
Boron	3774	2079	2.34	1.233
Brass	1805	985	8.68	4.573
Cadmium	610	321	8.65	4.557
Carbon	–	–	2.22	1.170
Chromium	3430	1888	7.19	3.788
Cobalt	2723	1495	8.90	8.90
Copper	1981	1083	8.96	4.719
Gold	1945	1063	19.32	10.180
22K Yellow	1930	1055	18.58	9.790
18K Green	1810	988	15.90	8.375
18K Yellow	1700	927	15.58	8.211
18K White	1730	943	14.64	7.712
18K Red	1655	902	15.18	7.998
14K Green	1765	963	14.20	7.482
14K Yellow	1615	879	13.07	6.885
14K White	1825	996	12.61	6.642
14K Red	1715	935	13.26	6.986
10K Green	1580	860	11.03	5.810
10K Yellow	1665	907	11.57	6.096
10K White	1975	1079	11.07	5.832
10K Red	1760	960	11.59	6.106
Iridium	4449	2454	22.50	11.849
Iron (pure)	2802	1539	7.87	4.145
Lead	621	328	11.34	5.973
Magnesium	1202	650	1.74	.917
Manganese	2273	1245	7.43	3.914
Molybdenum	4760	2625	10.20	5.347
Nickel	2651	1455	8.90	4.691
Osmium	4892	2700	22.50	11.854
Palladium	2831	1555	12.00	6.322
Phosphorus	111	44	1.82	.959
Platinum	3224	1733	21.45	11.301
10% Irid. Plat.	3250	1788	21.54	11.349
5% Irid. Plat.	3235	1779	21.50	11.325
Rhodium	3571	1967	12.44	6.553
Ruthenium	4500	2500	12.20	6.428
Silicon	2605	1430	2.33	1.247
Silver	1761	961	10.49	5.525
Sterling	1640	893	10.36	5.457
Coin	1615	879	10.31	5.430
Stainless Steel	2820	1550	8.0	4.214
Tin	450	232	7.30	3.846
Zinc	787	419	7.13	3.758

Reducing Factors

Karat on Hand From	Reducing Factors		
	To 18K	To 14K	To 10K
24K	.333	.714	1.400
22K	.222	.571	1.200
18K		.286	.800
14K			.400

To lower karat, locate the karat on hand in the left “From” column, then read across to the desired lower karat in the “To” column. Multiply the weight of your Karat Gold on hand by the “reducing factor.” This gives you the weight of the alloy you must add to reduce to the karat wanted.

See example:

Example: When changing 10 dwts. of 24K to 14K, locate the factor.

A) 24K to 14K = .714

Multiply the factor by the weight of Gold to be converted.

B) 10 dwts. \times .714 = 7.14 dwts.

Results: 10 dwts. of 24K, when added to 7.14 dwts. of alloy will give you 17.14 dwts. of 14K.

Raising Factors

Karat on Hand From	Raising Factors		
	To 14K	To 18K	To 22K
10K	.400	1.333	6.000
14K		.666	4.000
18K			2.000

To raise karat, locate the karat on hand in the left “From” column, then read across to the desired higher karat in the “To” column. Multiply the weight of your Karat Gold on hand by the “Raising Factor.” This gives you the weight of the fine gold you must add to raise to the karat wanted. See example:

Example: When changing 10 dwts. of 14K to 18K, locate the factor.

A) 14K to 18K = .666

Multiply the factor by the weight of gold to be converted.

B) 10 dwts. \times .666 = 6.66 dwts.

Results: 10 dwts. of 14K, when added to 6.66 dwts. of Fine Gold will give you 16.66 dwts. of 18K.