SEA CERAMIC TECHNOLOGIES

THERMAL PROPERTIES OF CERAMICS AND METAL / METAL COMPOSITES

MATERIAL	Thermal Conductivity (W / M-°K @ 25°C)	Thermal Expansion (x10^{-6} / °C)	Density (gm / cc)
Aluminum	218	23	2.7
Cu	398	17.8	8.9
Mo	138	5.0	10.2
W	178	4.6	19.2
Ag	429	19	10.5
Au	318	14.2	18.9
Brush Wellman E20 (20% BeO / 80% Be)	210	8.7	2.06
Brush Wellman E40 (40% BeO / 60% Be)	220	7.5	2.30
Brush Wellman E60 (60% BeO / 40% Be)	230	6.1	2.52
Mo/Cu			
60/40	215	10.2	9.68
65/35	205	9.4	9.74
75/25	185	8	9.87
80/20	175	7.5	9.9
85/15	165	6.7-7	10.1
W/Cu			
90/10	170	6.5	16.9
87/13	175	6.9	16.4
85/15	180	7.2	16.1
82/18	185	7.8	15.5
80/20	185	8.3	15.2
Si-Al			
27/73	177	17.7	2.4-2.7
42/58	160	14	"
50/50	149	13	"
60/40	129	10.5	"
70/30	120	8.5	"
Si-C	272	3.7	3.21
Si	151	4.2	2.33
GaAs	54	6.5	5.26
Al-Si-C	>180	6.9 - 8	3.0
Cu-Mo-Cu			
5/90/5	151	5.1	
13/74/13	170	5.8	9.86
20/60/20	194	6.5	
25/50/25	213	7.3	9.55
33/34/33	251	8.6	9.34
Kovar	17	5.1-5.9	8.4
Alloy 45		7-7.5	8.3
Alloy 46	16	7.5	8.7
Epoxy-Glass	.16-.26	11-20	2.1
Dupont 951 LTCC	2.3	5.5	3.1
Ferro A6M LTCC	2	7.5	2.5
Heratape LTCC	4.3	6.7	3.1
Hereaus CT2000 LTCC	2-3	8.5	3.05
99.5% BeO	250	7.5	2.85
AlN	167-223	4.5	3.21
96% Alumina	17-24	6.7	3.9
99.5% Alumina	37	6.7	3.9