Electric and Magnetic Material Properties

Dielectrics	Diel. Str.		ε_r	ε_r	ε_r	$10^4\tan\delta$	$10^4\tan\delta$	$10^4\tan\delta$
Material	V/mil	T(^{o}C)	f=1kHz	f=1MHz	f=3GHz	f=1kHz	f=1MHz	f=3GHz
Amber[1]		25	2.7	2.65	2.6	18	56	90
Fused Quartz[1]		25	3.78	3.78	3.78		900	2500
Mica[1]		25	5.4	5.4	5.4	6	3	3
Plexiglas[1]		25	3.12	2.76	2.6	465	140	57
Dry Soil[1]		25	2.83	2.53	2.44	500	180	11
Styrofoam[1]		25	1.03	1.03	1.03	<1	<2	1
Teflon[1]		25	2.1	2.1	2.1	<3	<2	1.5
Water[1]		25		78.2	76.7		400	1570
			f=60 Hz	f=10^6 Hz	f=10^{10}Hz	f=60 Hz	f=10^6 Hz	f=10^{10}Hz
Bakelite, BM 120[2]	300	20	4.87	4.74	3.68	800	280	410
Micarta[2]	1020	20	5.45	4.51	3.3	980	360	400
Nylon[2]	400	20	3.6	3.14	2.8	180	220	110
Plexiglas[2]	990	20	3.45	2.76	2.5	640	140	50
Polyethylene[2]	1200	20	2.26	2.26	2.26	<2	<2	5
Polystyrene[2]	600	20	2.55	2.55	2.54	<3	<3	3
Dry Sandy Soil[2]		20	3.45	2.6	2.5	2000	200	40
Teflon[2]	1500	22	2.1	2.1	2.1	<50	<50	4
Teflon[2]		100	2.04	2.04	2.04	<10	<10	5
Water[2]		20	81	78.2	50	400	400	2000

References:

1. C.R. Paul, K. W. Whites, S. A. Nasar, *Introduction to Electromagnetic Fields,* Mc-Graw-Hill (1998)
2. C. T. A. Johnk, *Engineering Electromagnetic Fields and Waves,* Wiley (1988)