



## Merix Preferred Laminates and Prepreg: – Materials Properties Comparison

Material Type	IPC 4101 Designation	Laminate	Prepreg	Dielectric Constant	Loss Tangent @ 1 GHz	Tg (°C) DSC	Z Axis Expansion	Moisture Absorption %
<b>FR4 140 Tg</b>								
ITEQ IT140	/21	x	x	4.1 – 4.7	.019	140	4.2%	0.38%
Grace MTC 97	/21	x	x					
Nanya FR4-86	/21	x	x	4.2 – 4.8	.016	140	Not Reported	0.1
Isola IS402	/21	x	x	4.2 – 4.7	.016	140	165 ppm/°C	Not Reported
Polyclad PCL 226	/21	x	x	4.2 – 4.6	.016	140	4.2%	0.20
<b>FR4 170 Tg</b>								
Isola FR406	/24 /26 /28	x	x	3.9 – 4.1	.018	170	140 ppm/°C	0.20
Polyclad PCL 370	/21 /24 /26	x	x	4.3 – 4.6	.016	175	3.5%	0.30
ZBC 2000™	/24	x		4.2	.014	160	140 ppm/°C	0.20
<b>Lead Free FR4 170 Tg</b>								
Isola IS410	/24 /26 /28	x	x	3.9 – 4.2	.021	175	3.5%	0.15 – 0.45
Polyclad PCL 370HR	/24 /26 /98	x	x	4.4 – 4.6	.017	180	2.7%	0.15
<b>Epoxy / PPO</b>								
GETEK	/25	x	x	3.5 – 4.1	.010	175 (DMA)	3.8%	0.20
<b>Low Loss High Tg Epoxy</b>								
Isola FR408	/24	x	x	3.7	.010	180	120 ppm/°C	0.15 – 0.45
Isola IS620	/30	x	x	3.78	.0086	215	1%	0.28
Nelco 4000-13	/29	x	x	3.6	.010	210	3.5%	0.1
Nelco 4000-13 SI	/29	x	x	3.4	.009	210	3.5%	0.1
<b>Lead Free Low Loss Epoxy</b>								
Isola IS620	/30	x	x	3.78	.0086	215	1%	0.28
<b>RF/Microwave</b>								
Rogers 4003	N/A	x		3.38	.0021	280	46 ppm/°C	.04
Rogers 4403	N/A		x	3.17	.005	280	80 ppm/°C	.05
Rogers 4350B	N/A	x		3.48	.0031	280	50 ppm/°C	.04
Rogers 4450B	N/A		x	3.54	.004	280	60 ppm/°C	.05
Rogers 3003	125/06	x		3.0	.0013	-	24 ppm/°C	<.1
Rogers 3010	125/08	x		10.2	.0023	-	24 ppm/°C	<.1
Rogers 3203	N/A	x		3.02	.0016	-	58 ppm/°C	<.1
Rogers 3210	N/A	x		10.2	.0027	-	34 ppm/°C	<.1
Taconic RF35P	4103/16	x		3.5	.0018	-	64 ppm/°C	.02
Gore Speedboard C	N/A		x	2.6	.004	220	-	-

Values are for reference and derived from a variety of sources and test methods (updated 2-1-2006)