

POLARCHIP™ CP6000 Thermal Interface Material Properties

Construction							
Property	Units	CP6000					Test Method
Filler	—	Boron Nitride					—
Matrix	—	ePTFE					—
Color	—	White					—
Adhesive	—	1 mil PSA					—
Thickness	mm (mils)	0.25 (10)	0.50 (20)	0.75 (30)	1.0 (40)	2.0 (80)	ASTM D347, method C
Thermal							
Property	Units	CP6000					Test Method
Thermal Impedance @ 0.07 Mpa (10 psi)	°C-cm ² /W (°C-in ² /W)	5.7 (0.88)	9.7 (1.5)	14.8 (2.3)	17.0 (2.6)	27.6 (4.3)	ASTM E1530
Thermal Impedance @ 0.17 Mpa (25 psi)		4.4 (0.68)	7.3 (1.1)	10.6 (1.6)	13.6 (2.1)	21.7 (3.4)	
Thermal Impedance @ 0.34 Mpa (50 psi)		3.6 (0.56)	5.8 (0.90)	8.1 (1.25)	10.1 (1.56)	18.1 (2.8)	
Thermal Conductivity @ 0.07 Mpa (10 psi)	W/m-K	0.84	0.84	0.84	0.84	0.84	
Thermal Conductivity @ 0.17 Mpa (25psi)		1.0	1.0	1.0	1.0	1.0	
Thermal Conductivity @ 0.34 Mpa (50 psi)		1.2	1.2	1.2	1.2	1.2	
Heat Capacity, 40 to 110°C	J/g	1.8	1.5	1.4	1.3	1.2	ASTM E 1269
Flammability Rating	—	V-0					UL94
Mechanical							
Property	Units	CP6000					Test Method
Compression @ 0.07 Mpa (10 psi)	%	20	18	18	12	6	ASTM D575, modified
Compression @ 0.17 Mpa (25 psi)		25	23	26	18	10	
Compression @ 0.34 Mpa (50 psi)		26	27	30	22	14	
Hardness	Shore A	61	60	48	48	60	ASTM D2240
Specific Gravity	g/cm ³	0.9	1.0	1.0	1.1	1.0	ASTM D792
Electrical							
Property	Units	CP6000					Test Method
Volume Resistivity	Ω-cm	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁴	ASTM D257
Dielectric Constant	—	2.0	2.1	2.0	2.2	2.4	ASTM D150
Dielectric Breakdown Voltage	Volts/mil	280	167	148	141	114	ASTM D149
Environmental							
Property	Units	CP6000					Test Method
Silicone Extraction	Pass/Fail	Pass	Pass	Pass	Pass	Pass	Bellcore Specs TR-NWT-000930 sec 10.3
Outgassing – Total Mass Loss	%	0.76	0.83	1.07	0.83	0.46	ASTM E595
Outgassing – Collected Volatile Condensable Materials		0.19	0.20	0.17	0.18	0.11	
Outgassing – Water Vapor Recovered		0.04	0.02	0.02	0.02	0.02	