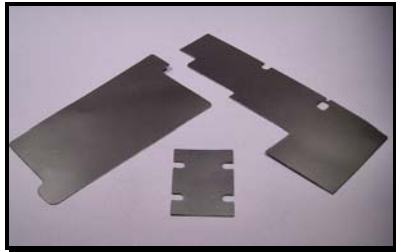


eGraf SpreaderShield Thermal Management Products are custom designed for use in applications requiring excellent two dimensional heat spreading and reduction in "hot spots" or touch temperature. The thermal properties and thickness are tailorable to specific applications. Typical applications are in laptop computers, flat panel displays, DVD cameras, cellular phones and PDA's. SpreaderShield materials are ideally suited where space for other cooling solutions is limited and lightweight is critical.



Typical eGraf SpreaderShield Material Properties

Property	eGraf SpreaderShield	Test Method
<i>Physical</i>		
Color	Dark Grey	
Thickness Range	0.08 mm - 1.52 mm	
Tensile Strength	4700 kPa	ASTM F-152
<i>Thermal</i>		
Operating Temperature	-40 to 400 °C	
Thermal Conductivity		
Thru-thickness	6-10 W/m•K	ASTM D 5470
In-plane	150-500 W/m•K	Angstrom's Method
<i>Electrical - typical</i>		
Electrical Resistivity		
Thru-thickness	>100 μΩm	ASTM C611
In-plane	10 μΩm	ASTM C611
<i>Note: Properties are those of the base graphite</i>		

eGraf SpreaderShield components are composites of natural graphite and can be laminated with Mylar® or metal foils. SpreaderShield materials are available with adhesive backing for easy peel and stick application.

SpreaderShield is Covered by US Patent 6482520 and other patents pending



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