

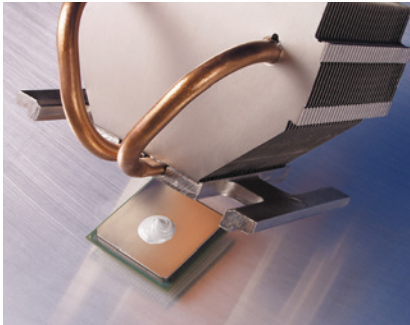
BERGQUIST® TGR 4000

Formerly known as TIC 4000

High Performance Thermal Interface Compound for Copper-Based Heat Sinks

Features and Benefits

- Thermal conductivity: 4.0 W/m-K
- Exceptional thermal performance: 0.19°C/W (at 50 psi)



BERGQUIST® TGR 4000 is a thermally conductive grease compound designed for use as a thermal interface material between a computer processor and a copper-based heat sink. Other high watt density applications will benefit from the extremely low thermal impedance of BERGQUIST® TGR 4000.

BERGQUIST® TGR 4000 compound wets-out the thermal interface surfaces and flows to produce low thermal impedance. The compound requires pressure of the assembly to cause flow. BERGQUIST® TGR 4000 compound will not drip.

For a typical 0.5 in. x 0.5 in. application at 0.005 in. thick, Henkel estimates approximately 0.02 ml (cc) of BERGQUIST® TGR 4000.

Although Henkel estimates a 0.02 ml (cc) volumetric requirement for a 0.5 in. x 0.5 in. component interface, dispensed at a thickness of 0.005 in., Henkel also recognizes that an optimized application would use the minimum volume of BERGQUIST® TGR 4000 material necessary to ensure complete wet-out of both mechanical interfaces.

TYPICAL PROPERTIES OF BERGQUIST® TGR 4000						
PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD			
Color	Grey	Grey	Visual			
Density (g/cc)	4.0	4.0	ASTM D792			
Continuous Use Temp. (°F) / (°C)	302	150	—			
ELECTRICAL						
Electrical Resistivity (Ω-m) ⁽¹⁾	N/A	N/A	ASTM D257			
THERMAL						
Thermal Conductivity (W/m-K)	4.0	4.0	ASTM D5470			
THERMAL PERFORMANCE VS. PRESSURE						
	Pressure (psi)	10	25	50	100	200
	TO-220 Thermal Performance (°C/W) ⁽²⁾	0.21	0.20	0.19	0.19	0.18

1) The compound contains an electrically conductive filler surrounded by electrically nonconductive resin.
2) TO-220 performance data is provided as a reference to compare material thermal performance.

Application Methods

1. Pre-clean heat sink and component interface with isopropyl alcohol prior to assembly or repair. Ensure heat sink is dry before applying BERGQUIST® TGR 4000.
2. Dispense BERGQUIST® TGR 4000 compound onto the processor or heat sink surface like thermal grease.
3. Assemble the processor and heat sink with clip or constant-pressure fasteners.

Typical Applications Include:

- High performance computer processors (traditional screw fastening or clamping methods will provide adequate force to optimize the thermal performance of BERGQUIST® TGR 4000)
- High watt density applications where the lowest thermal resistance interface is required