

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 @ 50 psi



TIC 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 TIC 4000.

TIC 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. TIC 4000 compound will not drip.

For a typical 0.5" x 0.5" application at 0.005" thick, Bergquist estimates approximately 0.02 ml (cc) of TIC 4000.

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

| TYPICAL PROPERTIES OF TIC 4000 | | | | | | |
|--|---------------------------------------|--------------|-------------|------|------|------|
| PROPERTY | IMPERIAL VALUE | METRIC VALUE | TEST METHOD | | | |
| Color | Gray | Gray | Visual | | | |
| Density (g/cc) | 4.0 | 4.0 | ASTM D792 | | | |
| Continuous Use Temp (°F) / (°C) | 302 | 150 | — | | | |
| ELECTRICAL | | | | | | |
| Electrical Resistivity (Ohm-meter) (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 non-conductive resin.
2) TO-220 performance data is provided as a reference to compare material thermal performance.

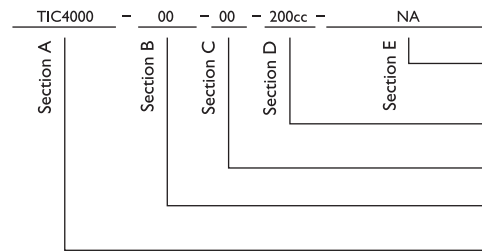
Application Methods

1. Pre-clean heat sink and component interface with isopropyl alcohol prior to assembly or repair. Ensure heat sink is dry before applying TIC 4000.
2. Dispense TIC 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 TIC 4000)
- High watt density applications where the lowest thermal resistance interface is required

Building a Part Number



Standard Options

- ◀ example
- NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.
- Containers: 5cc = 5.0cc, 25cc = 25.0cc, 200cc = 200.0cc.
- 00 = No options
- 00 = No options
- TIC4000 = Thermal Interface Compound 4000

Note: To build a part number, visit our website at www.bergquistcompany.com.

TIC™: U.S. Patents 6,797,758; 6,624,224; 6,339,120.



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