



BERGQUIST TGR 4000

Known as BERGQUIST TIC 4000
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PRODUCT DESCRIPTION

High Performance Thermal Interface Compound for Copper-Based Heat Sinks.

Technology	Silicone
Appearance	Gray
Application	Thermal management, Thermally conductive adhesive
Operating Temperature	150 °C

FEATURES AND BENEFITS

- Thermal Conductivity: 4.0 W/m-K
- Excellent thermal performance: 0.19°C/W @ 50psi

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.

The BERGQUIST TGR 4000 compound wets-out the thermal interface surfaces and flows to produce the lowest thermal impedance. The compound requires pressure of the assembly to cause flow. BERGQUIST TGR 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 BERGQUIST TGR 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 BERGQUIST TGR 4000 material necessary to ensure complete wet-out of both mechanical interfaces.

TYPICAL APPLICATIONS

- 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

TYPICAL PROPERTIES

Physical Properties

Density, ASTM D792, g/cc 4.0

Electrical Properties

Electrical Resistivity, ASTM D257, ohm-meter N/A

The compound contains an electrically conductive filler surrounded by electrically non-conductive resin

Thermal Properties

Thermal Conductivity, ASTM D5470, W/(m-K) 4.0

Thermal Performance vs. Pressure

TO-220 Thermal Performance, °C/W

@ 10 psi	0.21
@ 25 psi	0.2
@ 50 psi	0.19
@ 100 psi	0.19
@ 200 psi	0.18

TO-220 performance data is provided as a reference to compare material thermal performance

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Directions for use

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 spring clips or constant pressure fasteners



Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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Reference 2

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