ITW **Chemtronics**®

Frequently Asked Questions

Circuitworks®
Boron Nitride Heat Sink Grease, CW7250

1. What is heat sink grease?

Circuit boards produce large amounts of heat that has to be transferred from the components in order to prevent damage. This heat is usually removed by a heat sink, a component attached to the microprocessor. The better the contact between the processor and the heat sink, the faster and more efficiently the heat transfer will occur. Heat sink grease facilitates heat transfer away from electrical/electronic components by filling the voids between the surface of the component and the surface of the heat sink. The heat sink grease is produced from materials that allow heat to pass through them quickly, a quality known as thermal conductivity. These materials are blended into grease that fills the voids to improve heat transfer.

2. What is Boron Nitride?

Boron Nitride (or BN) is a binary ceramic compound of Boron and Nitrogen. Boron nitride is electrically insulating throughout it's operating range, and has a dielectric strength about four times that of aluminum oxide. Compared to other ceramic materials, BN is extremely thermally conductive, having a thermal conductivity about equal to that of stainless steel. Many people know this compound as "white graphite" due to the lubricity properties and structure being similar to graphite. However, it is much more oxidation resistant than graphite and has much higher temperature range (1800º F for BN versus only around 930º F for graphite). Major uses for boron nitride arise from its stability. The lubricity of boron nitride is remarkable throughout its useful temperature range and in all environments. Uses for stop-off areas or as an antispattering material also apply.

3. Why should I use Circuitworks® Boron Nitride Heat Sink Grease?

Circuitworks® Boron Nitride Heat Sink Grease combines the best properties of our other heat sink greases into an easy to use package. The Boron Nitride grease possesses high thermal conductivity like a silver-based product without the electrical conductivity usually associated with such products. It is also non-silicone, eliminating the issues associated with silicone oil based heat sink greases, such as oil bleed, insulation of contacts and dust accumulation.

4. Can this grease be used as a lubricant? What can it be used on, and what are it's advantages?

Circuitworks® Boron Nitride Heat Sink Grease can be used as a lubricant. Boron Nitride is used as dry lubricant and a lubricant additive in a variety of industries. It is primarily used on all types of moving parts to improve heat dissipation without compromising lubricity. It is ideal for applications that require lubricity without electrical conductivity.

5. How do I use heat sink grease?

Make sure the area for grease application is clean and dry. Apply a small amount of the grease to the bottom of the heat sink and spread evenly.

6. What are its features and benefits?

Features:

- Superior thermal conductivity
- Outstanding extreme temperature lubrication
- Exceptionally low bleed

Benefits:

- Rapidly transfers heat from surfaces and components
- Will not short components
- Use for lubrication in extreme conditions and temperatures up to 1800º F
- No creep or migration over a wide temperature range

7. Does Circuitworks® Boron Nitride Heat Sink Grease meet MIL-DTL-47113D, Type II?

Circuitworks® Boron Nitride Heat Sink Grease actually exceeds the MIL-DTL-47113D Type II specifications.

8. How is the product packaged?

The product is packaged in a convenient syringe containing 3.4 grams of grease.

9. What is the shelf life?

Five (5) years from the manufacturing date.

10. How do I get a sample?

Contact your ITW Chemtronics® Sales Manager or contact ITW Chemtronics® Customer Service.

For more information, contact:

ITW Chemtronics®
8125 Cobb Center Drive
Kennesaw, GA 30152-4386
Tel: 800-645-5244
Fax: 800-243-6003
www.chemtronics.com