TEXAS INSTRUMENTS *Audio and Imaging Products*

Arctic Silver Ceramique – 15 June 2011

The high-density, ceramic-based thermal compound specifically designed for modern high-power CPUs and high-performance heatsinks or water-cooling solutions. The Evolution of Cool!

Features:

High-Density ceramic content:

Céramique uses a high-density layered composite of five unique shapes of thermally conductive aluminum oxide, boron nitride and zinc oxide sub-micron particles to maximize particle-to-particle contact area and thermal transfer in micro to moderate bond line situations. This exclusive combination provides performance exceeding most metal based compounds.

Controlled Triple-Phase Viscosity:

Céramique does not contain any silicone. The suspension fluid is a proprietary mixture of advanced polysynthetic oils that provide superior performance and long-term stability. During the system's initial use, the heat from the CPU lowers the viscosity of the compound to enhance the filling of the microscopic valleys and ensure a minimum bond line between the heatsink and the CPU core. Then the compound thickens slightly over the next 100 to 300 hours of use to its final consistency designed for long-term stability. (This should not be confused with conventional phase change pads that are pre-attached to many heatsinks. Those pads melt each time they get hot then re-solidify when they cool. The viscosity changes that Céramique goes through are much more subtle and ultimately much more effective.)

Excellent Stability:

Céramique is engineered to not separate, run, migrate, or bleed.

Electrical Insulator:

Céramique does not contain any metal or other electrically conductive materials. It is a pure electrical insulator, neither electrically conductive nor capacitive.

Performance:

2 to 10 degrees centigrade lower CPU full load core temperatures than standard thermal compounds or thermal pads when measured with a calibrated thermal diode imbedded in the CPU core.

Easy Clean Up:

Céramique can easily be cleaned from CPUs and heatsinks with isopropyl alcohol or any of the cleaners listed in the product instructions

Innovative Dispenser:

The 2.5-gram Céramique is the first product available in our proprietary thermal compound syringe. Our new syringe is more compact, easier to handle and dispenses a higher percentage of its content than standard industrial or medical syringes. The amount of compound remaining in the syringe is easy to determine as the rear of the plunger is perfectly flush with the flange when the syringe is empty.

Compliancy:

RoHS Compliant.

Specifications:

Thermal Resistance:

<0.007°C-in2/Watt (0.001 inch layer)

Thermal Conductance:

>200,000W/m2.°C (0.001 inch layer)

Average Particle Size:

<0.38 microns <0.000015 inch

(67 particles lined up in a row equal 1/1000th of an inch.)

Temperature limits:

Peak: –150°C to >180°C Long-Term: –150°C to 125°C

Coverage Area:

2.5-gram syringes. (About 1cc)

At a layer 0.003" thick, one tube will cover approximately 20 square inches.

22-gram syringes. (About 8cc)

At a layer 0.003" thick, one tube will cover approximately 160 square inches.

Important Reminder:

Due to the unique shapes and sizes of the particles in Céramique, it will take a minimum of 25 hours and several thermal cycles to achieve maximum particle to particle thermal conduction and for the heatsink to CPU interface to reach maximum conductivity. (This period will be longer in a system without a fan on the heatsink.) On systems measuring actual internal core temperatures via the CPU's internal diode, the measured temperature will often drop slightly over this "break-in" period. This break-in will occur during the normal use of the computer as long as the computer is turned off from time to time and the interface is allowed to cool to room temperature. Once the break-in is complete, the computer can be left on if desired.