

Electrolube® HTS

Silicone Heat Transfer Compound

DESCRIPTION

Electrolube® HTS is a non-curing heat transfer paste, designed for use as a thermal interface material. It is recommended where the efficient and reliable thermal coupling of electronic components or heat dissipation between any surfaces are required. **HTS** is based on a silicone oil, offering an exceptionally wide operating temperature range.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- General purpose thermal management paste; excellent stability in a range of conditions
- Based on a silicone oil; offers an exceptionally wide operating temperature range
- Good thermal conductivity; designed for use as a thermal interface material
- Non-curing paste; allows simple and efficient rework of components if required

APPROVALS

| Standard | Status |
|------------------------------|------------------|
| RoHS Compliant (2015/863/EU) | Yes |
| NATO Stock No. – EHTS20S | 5999-99-225-2132 |

PRODUCT INFORMATION

Please contact your customer service representative for information on available package sizes.

PHYSICAL PROPERTIES

| Category | Results |
|--|-----------------------|
| Typical Properties | |
| Color | White |
| Base | Silicone Oil |
| Thermo-conductive Component | Powdered Metal Oxides |
| Density @ 20 °C (g/mL) | 2.1 |
| Cone Penetration @ 20 °C | 300 |
| Viscosity @ 1rpm (Pas) | 201 to 227 |
| Thermal Conductivity (Guarded Hot Plate) (W/m.K) | 0.9 |
| Thermal Conductivity (Heat Flow) (W/m.K) | 0.7 (calculated) |
| Temperature Range (°C) | -50 to 200 |
| Permittivity @ 10 ⁶ Hz | 4.9 |
| Volume Resistivity (Ω·cm) | 1 x 10 ¹⁵ |
| Dielectric Strength (kV/mm) | 18 |
| Weight Loss after 96 hours @ 100 °C | 0.8% |

DIRECTIONS FOR USE

Thermal pastes can be applied to the base and mounting studs of diodes, transistors, thyristors, heat sinks, silicone rectifiers and semi-conductors, thermostats, power resistors and radiators, to name but a few. When the contact surfaces are placed together, a firm metal-to-metal contact will only be achieved on 40 to 60% of the interface, depending on the smoothness of the surfaces. This means that air, which has relatively poor thermal conductivity, will account for the balance of the interface. Only a small amount of compound is required to fill these spaces and thus dramatically increase the effective surface area for heat transfer.

It is important to note that the quality of application of a thermal paste can be as important as the thermal conductivity of the material applied; best results are achieved when a uniform, thin coat is applied between the mating surfaces. Apply a thin layer of compound to one of the contact surfaces using a brush, spatula, roller, automated system or screen printing technique.

Ensure that the entire interface is covered to avoid hot-spots from forming. Any excess paste squeezed out during the mounting process should be removed.

APPLICATION GUIDELINES - BULK

Bulk Packaging Specifications

| Package Size | Inner Diameter | Height |
|----------------------|----------------|---------------------------|
| 700g Cartridge | 49.6 mm | 260 mm + 15 mm for Nozzle |
| 25 Kg Bulk Container | 300 mm | 285 mm |

ADDITIONAL INFORMATION

There are many methods of measuring thermal conductivity, resulting in large variances in results. Electrolube utilise a heat flow method which takes into account the surface resistance of the test substrate, thus offering highly accurate results of true thermal conductivity. Some alternative methods do not account for such surface resistance and can create the illusion of higher thermal conductivity. Therefore, when comparing thermal conductivity measurements, it is important to know what test method has been utilised. For more information, please contact the Technical Department.

The rate at which heat flows is dependent on the temperature differential, the thickness and uniformity of the layer, and the thermal conductivity of the material. Products with the same comparable thermal conductivity value may have very different efficiencies of heat transfer in the end application depending on how successfully a thin even film can be applied.

Oil separation in Thermal Pastes is a natural occurrence, and small amounts of separation is expected. Typically, during long term storage, the oil and thickeners will slowly begin to separate. Separation can be accelerated by high temperatures and storage orientation.

If oil separation is observed, we recommend stirring gently with a stainless-steel blade/spatula, in the original packaging, until the paste shows a uniform color and consistency.

Shelf Life: 36 Months

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

www.macdermidalpha.com

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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