

Electrolube® HTCP

Heat Transfer Compound Plus

DESCRIPTION

Electrolube® HTCP is a highly thermally conductive non-curing heat transfer paste, designed for use as a thermal interface material. It is recommended where large amounts of heat need to be dissipated efficiently, ensuring the reliable thermal coupling of electronic components. **HTCP** is a non-silicone paste, suitable for applications where silicones are prohibited, thus avoiding issues with silicone and low molecular weight siloxane migration.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- High thermal conductivity; optimum efficiency of heat dissipation
- Low viscosity for ease of application; designed for use as a thermal interface material
- Based on a non-silicone oil; avoids issues with silicone and LMW siloxane migration
- Non-curing paste; allows simple and efficient rework of components if required

APPROVALS

Standard	Status
RoHS Compliant (2015/863/EU)	Yes

PRODUCT INFORMATION

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

PHYSICAL PROPERTIES

Category	Results
Typical Properties	
Color	White
Base	Blend of synthetic fluids
Thermo-conductive Component	Powdered metal oxides
Density @ 20 °C (g/mL)	3.0
Cone Penetration @ 20 °C	250
Viscosity @ 1rpm (Pas)	101 to 112
Thermal Conductivity (Guarded Hot Plate) (W/m.K)	2.5
Thermal Conductivity (Heat Flow) (W/m.K)	1.7 (calculated)
Temperature Range (°C)	-50 to 130
Permittivity @ 1GHz	4.2
Volume Resistivity ($\Omega \cdot \text{cm}$)	1×10^{14}
Dielectric Strength (kV/mm)	42
Weight Loss after 96 hours @ 100 °C	<1.0%
Flammability	UL94 V-0 equivalent

APPLICATION GUIDELINES

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
700 g Cartridge	49.6 mm	260 mm + 15 mm for Nozzle
25 Kg Bulk Container	300mm $\pm$ 2	285mm $\pm$ 3

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

North America 140 Centennial Avenue Piscataway, NJ 08854 1.800.367.5460	Europe Ashby Park Coalfield Way Ashby de la Zouch Leicestershire, LE65 1JR, UK 44.01530.41960	Asia 8/F., Two Sky Parc 51 Hung To Road Kwun Tong, Kowloon, Hong Kong, SAR China 852.2500.5365
---	---	--

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

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. "R" and "TM" are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.