

Electrolube® HTCPX

Non-Silicone Heat Transfer Compound Plus - Xtra

DESCRIPTION

Electrolube® HTCPX provides the ultimate in thermal conductivity in a non-curing paste, designed for use as a gap filling material. It is recommended where the efficient and reliable thermal coupling of electronic components or heat dissipation is required. **HTCPX** 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 BULLETIN BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Exceptionally high thermal conductivity; aids rapid heat dissipation over uneven surfaces
- Very high viscosity, offering stability under vibration; ideal for use as a gap filling 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	Pale Grey
Base	Blend of synthetic fluids
Thermo-conductive Component	Powdered metal oxides
Density @ 20°C (g/mL)	3.1
Cone Penetration @ 20 °C	250
Viscosity @ 1rpm (Pas)	606 to 670
Thermal Conductivity (Guarded Hot Plate) (W/m.K)	3.4 (calculated)
Thermal Conductivity (Heat Flow) (W/m.K)	2.3
Temperature Range (°C)	-50 to 180*
Permittivity @ 1GHz	4.2
Volume Resistivity ($\Omega \cdot \text{cm}$)	1 to 10^{14}
Dielectric Strength (kV/mm)	42
Weight Loss after 96 hours @ 100°C	<1.0%

* Application dependent: excursions to higher temperatures may be possible, testing in end-use conditions is advised.

APPLICATION GUIDELINES

HTCPX was developed as a thermally conductive gap filler. For gap filling applications the material can be dispensed either manually or via automated equipment into the desired location. The product should be tested to ensure the thickness of paste applied is suitable for the end application conditions. It should be noted that the thermally conductive pastes are just one layer in the system; dissipation from the heat generating source is achieved through many layers of different material before the heat is dissipated by free or forced convection. Therefore, a thermal paste will only aid the dissipation of heat if the interface where it is used has the lowest thermal conductivity within the system, i.e., is the rate determining step. The use of excess thermal paste will not offer an increase in the efficiency of heat transfer.

For other applications, HTCPX should be applied in the most appropriate manner for the application, avoiding any air inclusion and ensuring the product applied is as uniform as possible. A lower viscosity version of HTCPX is available if required (HTCPX-LV).

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	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.

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. "®" and "TM" are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.