HTCX_ZF
Non-Silicone Heat Transfer Compound - ZnO Free

HTCX_ZF is a Zinc Oxide (ZnO) free version of HTCX featuring improved thermal conductivity, lower oil bleed, and lower evaporation weight loss. It is recommended where the use of zinc oxide, a marine pollutant, is restricted and where the efficient and reliable thermal coupling of electronic components or heat dissipation between any surfaces are required. HTCX_ZF is a non-silicone paste, suitable for applications where silicones are prohibited, thus avoiding issues with silicone and low molecular weight siloxane migration.

- High performance thermal management paste; designed for use as a thermal interface material
- Excellent stability; ideal for applications exposed to varying temperature and humidity conditions
- Contains no zinc oxide; suitable for applications where marine pollutants are restricted
- Non-curing paste; allows simple and efficient rework of components if required

Approvals	**RoHS-2 Compliant (2011/65/EU):**	**Yes**
Typical Properties	Colour:	Grey
	Base:	Blend of synthetic fluids
	Density at 20°C (g/ml):	2.28
	Cone Penetration at 20°C:	330
	Viscosity at 1rpm (Pa s):	85-95
	Thermal Conductivity (Guarded Hot Plate):	1.65 W/m.K (calculated)
	Thermal Conductivity (Heat Flow):	1.10 W/m.K
	Temperature Range:	-50°C to +180°C*
	Weight Loss after 96 hours at 100°C:	<0.2%
	Permittivity at 1 GHz:	4.2
	Volume Resistivity:	1 x 10^{12} Ohm-cm
	Dielectric Strength:	42 kV/mm

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

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 – 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.

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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.

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 Electrolube 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.

A full range of heat transfer products are available from Electrolube: high thermal conductivity pastes (HTCP), silicone based pastes for very high temperature applications (HTS), gap filling materials (HTCPX), Silicone RTVs (TCOR, TCER), epoxy adhesives (TBS) and encapsulation resins (ER2220, UR5633, SC2003).

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