



Technical Data Sheet

HTCPX

Non-silicone Heat Transfer Compound Plus - Xtra

Product Description

HTCPX provides the ultimate in thermal conductivity together with the advantage of using non-silicone base oil. The exceptional properties obtained from HTCPX are due to the novel use of various metal oxide (ceramic) powders. These materials are electrically insulative to ensure that leakage currents can not be formed if the paste should come into contact with other parts of the assembly.

The product contains no silicones and thus cannot migrate onto electrical contacts with consequent high contact resistance, arcing or mechanical wear. Similarly soldering problems caused by silicones will not be encountered.

HTCPX should be used where a large amount of heat needs to be dissipated quickly and effectively. The heat dissipation from the source (e.g. semiconductor barrier layer) is achieved through many layers of different material before the heat is dissipated through free or forced convection. It should be noted that the use of a thermally conductive 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. This is usually the case.

The rate at which heat flows is dependent on the temperature differential, the thickness of the layer, and the thermal conductivity of the material.

A full range of heat transfer products are available from Electrolube. This range includes silicone and non-silicone based pastes (HTS, HTSP, HTC, HTCP and HTCX), RTV rubbers (TCR, TCER and TEOR), an adhesive epoxy (TBS) and an epoxy based potting resin (ER2074).

Features

- Excellent non-creep characteristics.
- Vibration stable
- Wide operating temperature range.
- Excellent thermal conductivity even at high temperatures.
- Easy to handle and economic in use.
- Low in toxicity.
- Light colour enables treated parts to be easily identified.
- Low evaporation weight loss.

We recommend that compatibility tests be carried out on sensitive materials prior to large scale production.

In all applications HTCPX will increase product quality, productivity, reduce maintenance costs and minimise rejects.

Typical Properties:

Colour:	White
Base:	Blend of synthetic fluids
Thermo-conductive Component:	Powdered metal oxides
Thermal Conductivity (Heat flow):	2.28 W/m.K
Thermal conductivity (Guarded Hot Plate)	3.42 W/m.K (calculated)
Density @ 20°C:	3.1 g/cm ³
Temperature Range:	-50°C to +130°C
Weight Loss after 96 hours @ 100°C:	< 1%
Permittivity @ 10 ⁶ Hz:	4.2
Specific Resistance:	1 x 10 ¹⁴ Ohms/cm
Dielectric Strength:	42 kV/mm
Penetration:	230-270
Flash Point of Base Oil:	> 280°C

Directions for Use

HTCPX was developed as a thermally conductive gap filler but can also be used as a highly thermal conductive paste. In the case of former the material can be applied either automatically or manually with dispersion tools. In the case of latter apply in a thin film, to the base and mounting studs of diodes, transistors, thyristors, heat sinks, silicone rectifiers and semi conductors, thermostats, power resistors and radiators.

Additional Information

Some useful conversion factors are as follows:

1 cal	=	0.003968 BTU (British Thermal Unit)
1 cal/cm x sec x K	=	0.04964 BTU/in x h x °F
	=	416.8 W/m x K
1 BTU/h x ft x °F	=	12 BTU x in/h x sq ft x °F
	=	0.04134 cal/sec x cm x K
1 BTU x in/h x sq ft x F°	=	0.0003445 cal/sec x cm x K
	=	0.1437 W/m x K
1 BTU/h x ft x °F	=	1.724 W/m x K
1 W/in x K	=	22.75 BTU/h x ft x °F
1 cal/sec x cm	=	10.6 W/in x K

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