Technical Data Sheet

ELECTROLUBE

PRODUCT DESCRIPTION:	Non-Silicone Heat Transfer Compound Plus	DATE:	02/98
PRODUCT CODE:	HTCP	PAGES:	2

PRODUCT DESCRIPTION

HTCP provides the ultimate in thermal conductivity together with the advantage of using a non-silicone base oil. The exceptional properties obtained from **HTCP** 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.

HTCP 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.

HTCP 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 dependant 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 & HTC), an RTV rubber (TCR), an adhesive epoxy (TBS) and an epoxy based potting resin (ER2074).

A silicone version of this material is also available, order code HTSP.

APPLICATION

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.

FEATURES

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

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PROPERTIES

Colour:	White
Base:	Blend of synthetic fluids
Thermo-conductive Component:	Powdered metal oxides
Thermal Conductivity:	2.5 W/mK
Density @ 20°C:	3 g/cm^3
Temperature Range:	-50°C to +130°C
Weight Loss after 96 hours @ 100°C:	< 1%
Permitivity @ 10^6 Hz:	4.2
Specific Resistance:	1 x 10^{14} Ohms/cm
Dielectric Strength:	42 kV/mm
Penetration:	210-250
Flash Point of Base Oil:	> 280°C

PACKAGING	ORDER CODE
20 ml Syringe (60g)	HTCP20S
700 g cartridge	HTCP700G
1 Kg Bulk	HTCP01K

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