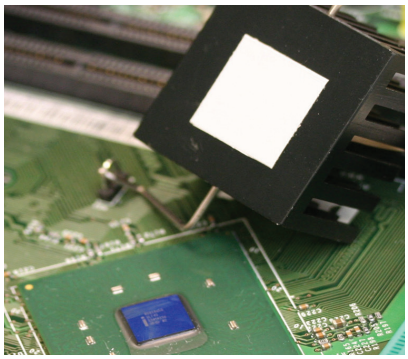
THERMAL GREASES

High-Performance and General Duty Thermal Greases



Description

Chomerics thermal greases offer a range of performance covering the simplest to the most demanding thermal requirements. These materials are screened, stenciled or dispensed and require virtually no compressive force to conform under typical assembly pressures.

The excellent surface wetting results in low interfacial resistance.

- **T670** is offered with a very high bulk thermal conductivity of 3 W/m-K. Product offers low impedance as it will achieve a thin bondline of about 0.001 in.
- **T660** contains solder fillers for extremely low thermal impedance at thinner bondline thicknesses (down to about 0.001in.).
- **T650** is a general duty grease for typical applications.

Features/Benefits

- Silicone based materials conduct heat between a hot component and a heat sink or enclosure
- Fills interface variable tolerances in electronics assemblies and heat sink applications
- Dispensable, highly conformable materials require no cure cycle, mixing or refrigeration
- Thermally stable and require virtually no compressive force to deform under typical assembly pressures
- Supports high power applications requiring material with minimum bond line thickness and high conductivity
- Ideal for rework and field repair situations

Thermal Greases					
Typical Properties		T650	T660	T670	Test Method
Physical	Color	Pale Blue	Light Gray	White	Visual
	Specific Gravity	2.3	2.4	2.6	ASTM D792
	Viscosity, cps	190,000	170,000	350,000	NA
	Operating Temperature Range, °F (°C)	-58 to 392 (-50 to +200)	-58 to 392 (-50 to +200)	-58 to 392 (-50 to +200)	NA
	Phase Transition Temperature, °F (°C)	N/A	144 (62)	N/A	ASTM D3418
	Weight Loss % @150°C, 48 Hours	0.21	0.17	< 0.2	TGA
Thermal	Thermal Impedance,°C-in^2/W (°C-cm^2/W) @ 100 psi	0.02 (0.13) @ 50°C 0.02 (0.13) @ 65°C	0.02 (0.13) @ 50°C 0.009 (0.06) @ 65°C	0.01 (0.07) @ 50°C 0.01 (0.07) @ 65°C	ASTM D5470
	Thermal Conductivity, W/m-K	0.8	0.9	3.0	ASTM D5470
	Heat Capacity, J/g-K	1	1	1	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	300	300	150	ASTM E831
Electrical	Volume Resistivity, ohm-cm	10^{14}	N/A	10^{14}	ASTM D257
	Voltage Breakdown Vac/mil	150*	N/A*	150*	ASTM D149
Regulatory	Flammability Rating	Not Tested	Not Tested	Not Tested	UL 94
	RoHS Compliant	Yes	Yes	Yes	Chomerics Certification
	Outgassing, % TML	0.21	0.17	<0.2	ASTM E595
	Shelf Life, months from date of manufacture	24	24	24	Chomerics

*Not recommended for dielectric applications.

Thermal Greases

Typical Applications

- Mobile, desktop, server CPUs
- Engine and transmission control modules
- Memory modules
- Power conversion equipment
- Power supplies and UPS
- Power semiconductors

Product Attributes

T670 Highest Thermal Performance

- High bulk thermal conductivity
- Extremely low thermal impedance at thin and thick bondline thicknesses
- Stencil screen printed part application

T660 High Performance

- Dispersed solder spheres for high performance applications above 62°C
- Excellent thin bondline performance (less than 0.002 - 0.003 in)

T650 General Duty

- Used on general purpose applications

Material Application

T650:
Material is supplied in 3, 15 or 30cc syringes for easy dispensing onto components or heat sinks. Bulk packaging is also available. Excess material can be wiped with a clean cloth and suitable solvent.

T660:
Packaging the same as T650.
For optimum performance, the processor should be allowed to reach temperatures greater than 65ºC (149°F). This causes the solder fillers to melt and conform to the mating surfaces, obtaining a minimum bondline thickness at the interface. This process only needs to occur one time to achieve optimum thermal performance of the grease.

T670:
T670 high performance thermal grease is supplied in easy access metal cans or pails. Mix with a spatula and remove the desired amount onto the component or stencil screen. Stencil desired pad part size onto heat sink for immediate assembly or shipping.

Ordering Information

Part Number Examples
65-00-T650-0160 = T650 Material in a 160 cc jar
65-00-T670-3790 = T670 Material in a 3790 cc (gallon pail)

Part Number:

65 – 00 – YYYY – ZZZZ

YYYY	ZZZZ
YYYY = Material (T670, T660 , or T650)	ZZZZ = Volume in cc 0080 = 8 oz. jar (80 cc) 0160 = 8 oz. jar (160 cc) 3790 = 1 gallon pail (3790 cc)

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