

THERM-A-GAP® GEL 50TBL

High Performance Fully Cured Dispensable Thin Bond Line Gel

Parker Chomerics THERM-A-GAP GEL 50TBL is a reworkable, high performance, one component, dispensable, thermal interface material with 5.0 W/m-K Bulk typical Thermal Conductivity. GEL 50TBL was developed to conduct heat away from electronics to a heat sink or enclosure at very thin bond lines. At minimum bond line thickness of 0.002" or 0.05mm, the Apparent Thermal Conductivity exceeds 11 W/m-K. The "TBL" suffix stands for Thin Bond Line, indicating that this material is meant for thin bond line applications. THERM-A-GAP GEL 50TBL requires no mixing or secondary curing and is designed for easy application and possible rework.

THERM-A-GAP GEL 50TBL requires very low compressive force to conform under assembly pressure, thereby subjecting components, solder joints and leads to minimal stresses. This material is primarily designed for thin bond lines and is typically not intended to be used as a gap filler for gaps larger than .020 in (0.50mm) in electronics assemblies.

As with all Parker Chomerics thermal gels, GEL 50TBL is formulated to accommodate today's high-performance needs and high reliability electronics while being ideal for automated dispensing machines, rework, and field repair situations.

Product Features

- Very thin bond line 0.002" (0.05mm) typical
- Bulk Thermal Conductivity: 5.0 W/m-K
- Apparent Thermal Conductivity at minimum bond line thickness: >11 W/m-K
- Low thermal impedance
- Very low compression force
- Reworkable
- Easily dispensed
- No secondary curing required
- No pump out

Typical Applications

- Automotive electronic control units (ECUs)
- Telecommunications base stations
- Power electronics and semiconductors
- Memory and power modules
- LEDs and consumer electronics
- Microprocessors and graphics processors



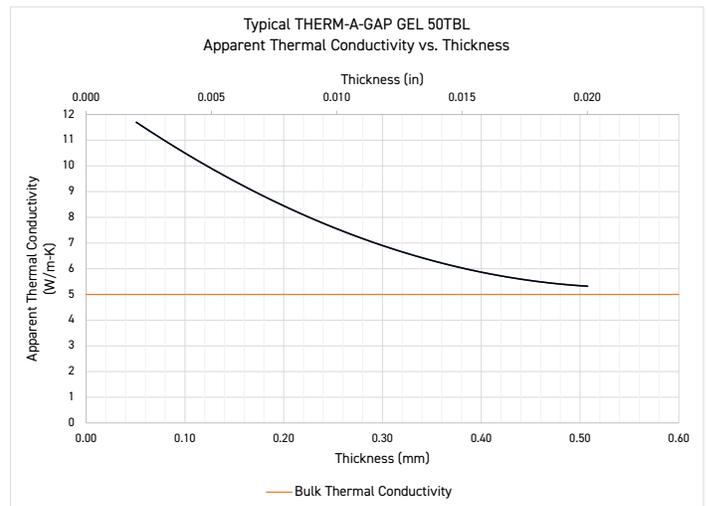
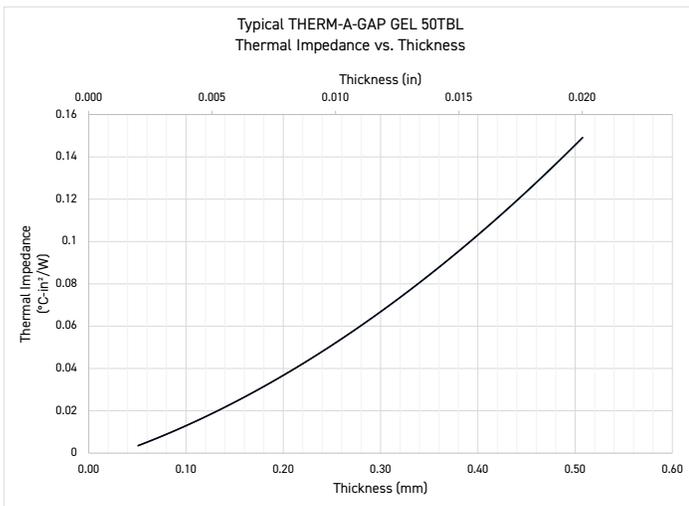
THERM-A-GAP GEL 50TBL PRODUCT INFORMATION

Typical Properties†		GEL 50TBL	Test Methods
Physical	Color	Grey	Visual
	Flow Rate, g/min - 30 cc syringe with no tip, 0.100" orifice, @ 90 psi (621 kPa)	20	Chomerics
	Specific Gravity	3.3	ASTM D792
	Typical Minimum Bond Line Thickness, in (mm)	0.002 (0.05)	Chomerics
Thermal	Thermal Conductivity, (Bulk), W/m-K*	5.0	ASTM D5470
	Thermal Conductivity (Apparent - at min. bond line), W/m-K*	>11	ASTM D5470
	Thermal Impedance, °C-in ² /W (°C-cm ² /W) @ 50 psi, @ 0.002 in (0.051 mm) thick	0.0069 (0.045)	ASTM D5470
	Heat Capacity, J/g-K	1	ASTM E1269
	Operating Temperature Range, °F (°C)	-67 to 392 (-55 to 200)	Chomerics
Electrical	Dielectric Strength, Vac/mil (kVac/mm)	200 (7.9)	ASTM D149
	Volume Resistivity, ohm-cm	10 ⁴	ASTM D257
	Dielectric Constant @ 1,000 kHz at 0.030" (0.76 mm) thick	3.3	ASTM D150
	Dissipation Factor @ 1,000 kHz at 0.030" (0.76 mm) thick	0.002	Chomerics
Regulatory	Flammability Rating	V0 (Tested by Chomerics)	UL 94
	RoHS Compliant	Yes	Chomerics Certification
	Outgassing, % TML (% CVCM)	0.22 (0.08)	ASTM E595
	Shelf Life, months from date of manufacture	12	Chomerics
	Storage Conditions, °F (°C) @ 50% Relative Humidity	50 to 90 (10 to 32)	Chomerics

† Typical properties: these are not to be construed as specifications.

* For more information on Bulk and Apparent Thermal Conductivity see our white paper:

<https://blog.parker.com/site/usa/en-US/details-home-page/thermal-conductivity-measurement-frequently-asked-questions-faqs-us>



Due to the very thin bond line of this high performance GEL, the apparent thermal conductivity at minimum bond line thickness is greater than that of the bulk thermal conductivity. As the material thickness increases, the apparent thermal conductivity will approach the bulk thermal conductivity as presented in the graph to the right.

THERM-A-GAP GEL 50TBL ORDERING INFORMATION

Part Number	Typical Standard Fill Volume (cc)	Typical Standard Fill Mass (g)	Packaging Description
65-00-GEL50TBL-0010	10	33	10cc Luer-Lock™ manual syringe
65-02-GEL50TBL-0030	27	87.8	30cc EFD plastic cartridge
65-02-GEL50TBL-0180	150	495	6oz (180cc) EFD plastic cartridge
65-00-GEL50TBL-0300	300	990	12oz (300cc) aluminum cartridge
65-1P-GEL50TBL-2500	2500	8,250	1 U.S. gal. pail



Parker Hannifin Corporation

Chomerics Division

77 Dragon Court

Woburn, MA 01801

Phone 781 935 4850

Fax 781 933 4318

chomailbox@parker.com

parker.com/chomerics

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