

# THERM-A-GAP™ Gels

Dispensable, Very Low Compression Force, Thermal Gap Fillers

THERM-A-GAP™ Gels are highly conformable, pre-cured, single-component compounds. The cross-linked gel structure provides superior long term thermal stability and reliable performance.

## FEATURES / BENEFITS

- Dispensable
- Fully cured
- Highly conformable at low pressures
- No refrigeration, mixing or filler settling issues in storage
- Single dispensable TIM can eliminate multiple pad part sizes/numbers
- Reworkable



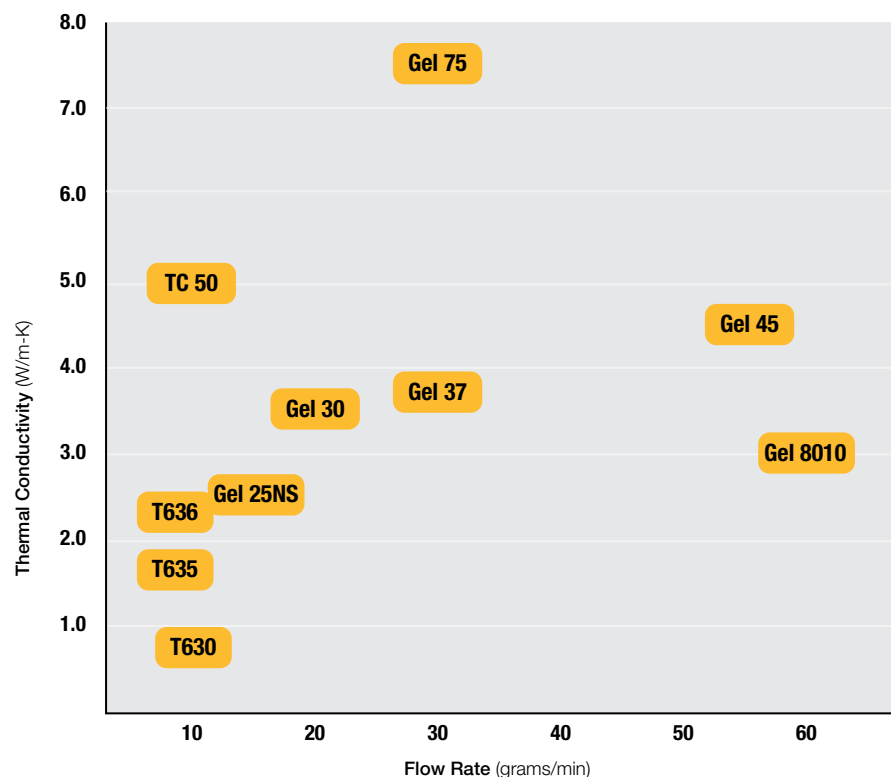
## TYPICAL APPLICATIONS

- Automotive electronic control units (ECUs)
  - Engine control
  - Transmission control
  - Braking/traction control
- Power conversion equipment
- Power supplies and uninterruptible power supplies
- Power semiconductors
- MOSFET arrays with common heat sinks
- Televisions and consumer electronics



Consult Applications Engineering for automated dispensing equipment recommendations.

## PERFORMANCE GUIDE

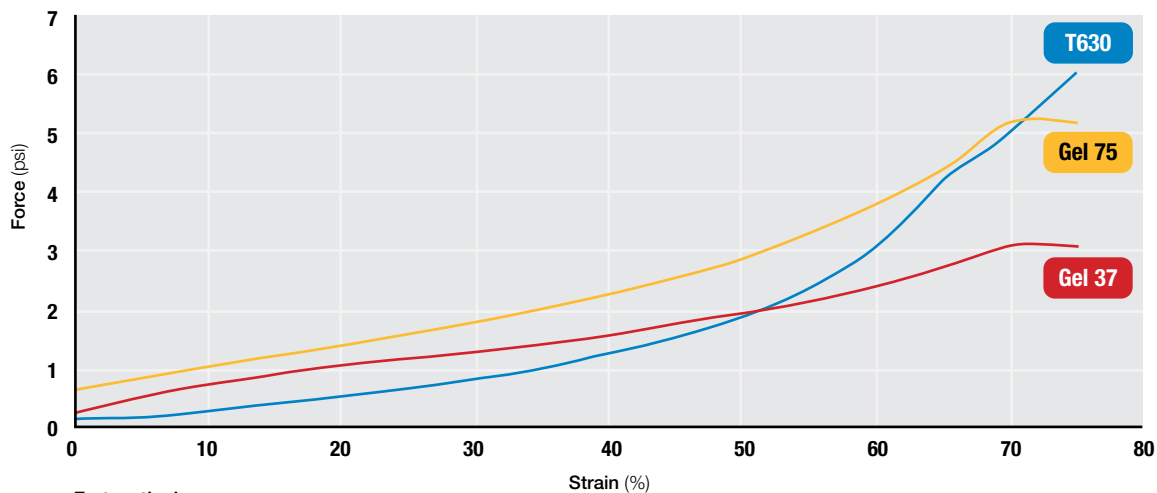


## THERM-A-GAP™ Thermally Conductive Gels

Typical Properties†		T630	T635	T636	Test Method
<b>Physical</b>	Color	White	White	Yellow	Visual
	Binder	Silicone	Silicone	Silicone	--
	Flow Rate, grams/min - 30 cc taper tip, 0.130" orifice*, 90 psi (621 kPa)	10*	8	8	Chomerics
	Specific Gravity	2.0	1.5	1.2	ASTM D792
	Typical Minimum Bondline Thickness, in (mm)	0.004 (0.10)	0.015 (0.38)	0.015 (0.38)	--
<b>Thermal</b>	Thermal Conductivity, W/m-K	0.7	1.7	2.4	ASTM D5470
	Heat Capacity, J/g-K	1.1	0.9	0.9	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	350	400	400	ASTM E831
	Operating Temperature Range, °F (°C)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	--
<b>Electrical</b>	Dielectric Strength, Vac/mil (kVac/mm)	200 (8)	200 (8)	200 (8)	ASTM D149
	Volume Resistivity, ohm-cm	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>	ASTM D257
	Dielectric Constant @ 1,000 kHz	5.5	4.0	4.0	ASTM D150
	Dissipation Factor @ 1,000 kHz	0.010	0.003	0.003	Chomerics
<b>Regulatory</b>	Flammability Rating (See UL File E140244 for details)	V-0	Not Tested	V-0	UL 94
	RoHS Compliant	Yes	Yes	Yes	Chomerics Certification
	Outgassing, % TML (% CVCM)	0.55 (0.14)	Not Tested	0.49 (0.18)	ASTM E595
	Shelf Life, months from date of manufacture	18	18	18	Chomerics
	Storage Conditions, °F (°C) @ 50% Relative Humidity	50 to 90 (10 to 32)	50 to 90 (10 to 32)	50 to 90 (10 to 32)	Chomerics

† Typical properties: these are not to be construed as specifications. \* THERM-A-GAP T630 flow rate is measured in a 0.100" orifice.

## COMPRESSION DEFLECTION



### Test method:

- ASTM C165 Modified
- Dispensed material and brought 0.50" diameter probe down to 0.100" height
- Strain rate 0.025 in/min

## THERM-A-GAP™ Thermally Conductive Gels

Typical Properties†		GEL 25NS	GEL 8010	GEL 30	GEL 37	Test Method
Physical	Color	Yellow	White	Pink	Blue	Visual
	Binder	Urethane	Silicone	Silicone	Silicone	--
	Flow Rate, grams/min - 30 cc syringe with no tip attachment, 0.100" orifice, 90 psi (621 kPa)	15	60	20	30	Chomerics
	Specific Gravity	2.6	2.7	3.1	3.1	ASTM D792
	Typical Minimum Bondline Thickness, in (mm)	0.004 (0.11)	0.002 (0.05)	0.004 (0.10)	0.004 (0.10)	Chomerics
Thermal	Thermal Conductivity, W/m-K	2.5	3.0	3.5	3.7	ASTM D5470
	Heat Capacity, J/g-K	0.96	1	1	1	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	< 300	150	150	150	ASTM E831
	Operating Temperature Range, °F (°C)	-58 to 257 (-50 to 125)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	Chomerics
Electrical	Dielectric Strength, Vac/mil (kVac/mm)	200 (8)	200 (8)	200 (8)	180 (7.0)	ASTM D149
	Volume Resistivity, ohm-cm	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>	ASTM D257
	Dielectric Constant @ 1000 kHz	6.7	6.3	7.0	5.9	ASTM D150
	Dissipation Factor @ 1000 kHz	0.018	0.002	0.002	0.012	Chomerics
Regulatory	Flammability Rating	V-0	V-0	V-0	V-0	UL 94
	RoHS Compliant	Yes	Yes	Yes	Yes	Chomerics Certification
	Outgassing, % TML (% CVCM)	0.23 (0.04)	1.33 (0.34)	0.15 (0.05)	0.18 (0.07)	ASTM E595
	Shelf Life, months from date of manufacture	12	18	18	18	Chomerics
	Storage Conditions, °F (°C) @ 50% Relative Humidity	50 to 90 (10 to 32)	50 to 90 (10 to 32)	50 to 90 (10 to 32)	50 to 90 (10 to 32)	Chomerics

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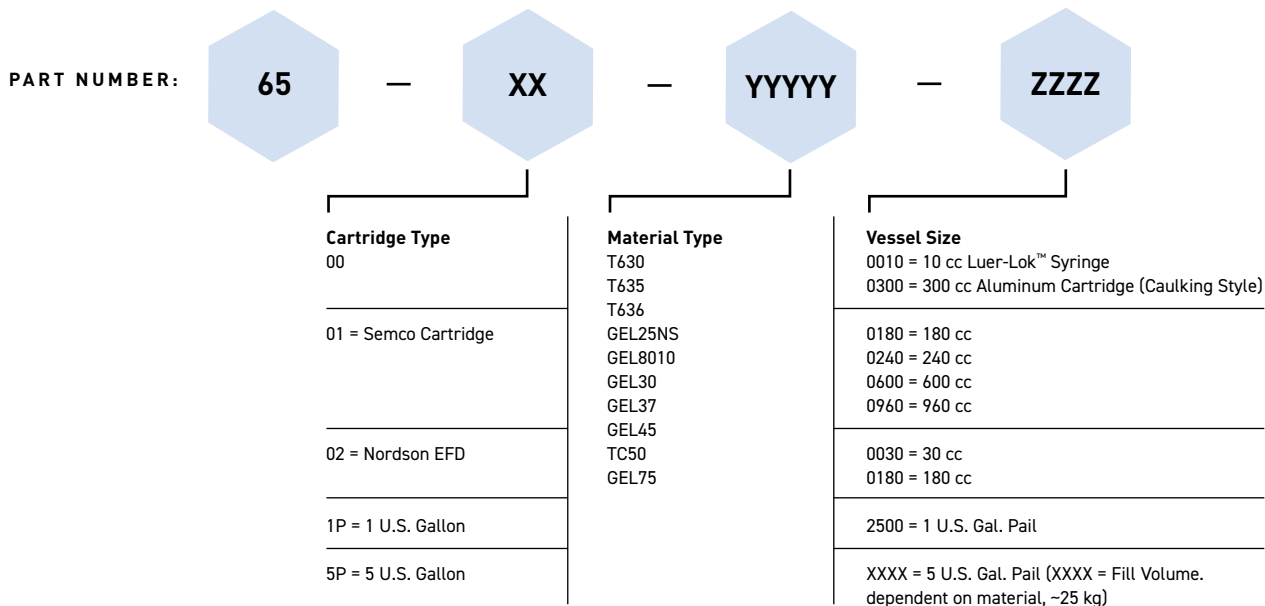
Typical Properties†		GEL 45	TC50	GEL 75	Test Method
Physical	Color	Black	Gray	White	Visual
	Binder	Silicone	Silicone	Silicone	--
	Flow Rate, grams/min - 30 cc syringe with no tip attachment, 0.100" orifice, 90 psi (621 kPa)	55	10	30	Chomerics
	Specific Gravity	3.1	3.25	3.4	ASTM D792
	Typical Minimum Bondline Thickness, in (mm)	0.0035 (0.0889)	0.006 (0.15)	0.008 (0.20)	Chomerics
Thermal	Thermal Conductivity, W/m-K	4.5	5.0	7.5	ASTM D5470
	Heat Capacity, J/g-K	1	1	1	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	150	150	150	ASTM E831
	Operating Temperature Range, °F (°C)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	Chomerics
Electrical	Dielectric Strength, Vac/mil (kVac/mm)	200 (8)	200 (8)	220 (8.7)	ASTM D149
	Volume Resistivity, ohm-cm	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>	ASTM D257
	Dielectric Constant @ 1000 kHz	7.0	6.8	7.2	ASTM D150
	Dissipation Factor @ 1000 kHz	0.002	0.022	0.023	Chomerics
Regulatory	Flammability Rating	V-0	V-0	V-0	UL 94
	RoHS Compliant	Yes	Yes	Yes	Chomerics Certification
	Outgassing, % TML (% CVCM)	0.15 (0.05)	0.07 (0.01)	0.18 (0.05)	ASTM E595
	Shelf Life, months from date of manufacture	18	18	9	Chomerics
	Storage Conditions, °F (°C) @ 50% Relative Humidity	50 to 90 (10 to 32)	50 to 90 (10 to 32)	50 to 90 (10 to 32)	Chomerics

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# Ordering Information

## THERM-A-GAP™ Thermally Conductive Gels

These materials are available in the following formats.



### Ordering Information: Custom Configurations

Larger custom cartridges and pails available. Please contact Parker Chomerics for a pre-assigned part number for custom part sizes.

Dispensing Equipment Options	Optional Supplier	Description
Hand-Gun Pneumatic Dispensing 300 cc cartridges	Bergdahl Associates	SEMCO® Model 550
Hand-Gun Pneumatic Dispensing 180 cc (6 oz) cartridges	Bergdahl Associates	Model 250A-6 oz Sealant Gun
<b>www.bergdahl.com</b>		
Pneumatic Shot Size Controllers 30 cc, 180 cc and 300 cc shot size dispensing equipment	EFD	Ultra 2400 Series
		Ultra 1400 Series
		Ultra 870 Series
30 cc/55 cc Adapter Assembly	EFD	10000D5152
Dispensing Sleeve to support 6 oz (180 cc) SEMCO® tubes	EFD	5192-6
<b>www.efd-inc.com</b>		

SEMCO is a registered trademark of PPG Aerospace