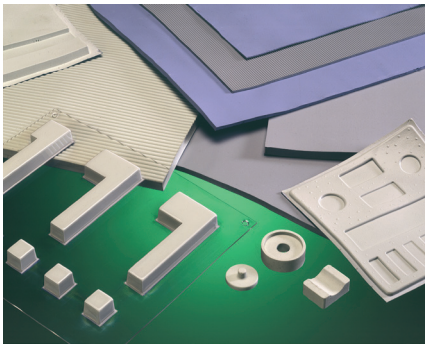


# THERM-A-GAP™ 174, 274 and 574

## Thermally Conductive Gap Filler Pads



### DESCRIPTION

THERM-A-GAP™ 174, 274, and 574 represent the original gap-fillers from Chomerics. These materials have gained broad acceptance across multiple applications from everyday consumer products to the most rigorous applications in military and aerospace electronics.

These products are available with aluminum foil "A" or on "clean break" glass fiber "G". As with all previous Chomerics gap-fillers,

the "A" versions come with a high strength pressure sensitive acrylic adhesive for permanent attachment to the cold surfaces. The clean break "G" versions have no adhesive, but are inherently tacky. In addition, 174 and 274 are available with "T" backing, which is composed of a rigid, acrylic PSA-backed thermal insulation pad. This option provides a 0.25 mm (0.010 in) thick, tear and puncture resistant dielectric layer.

**THERM-A-GAP™ Thermally Conductive Gap Filler Pads**

Typical Properties		174	274	574	Test Method
Physical	Color	Light Purple	Green	Light Gray	Visual
	Carrier G= Woven Glass with no PSA A= Aluminum foil with PSA T= Thermal Base Stock with PSA	G,A,T	G,A,T	G,A	Visual
	Standard Thickness* mm (inch)	0.50 - 5.0 (0.020 - 0.200)	0.50 - 5.0 (0.020 - 0.200)	1.02 - 5.0 0.020 - 0.200	ASTM D374
	Specific Gravity	2.3	2.1	1.7	ASTM D792
	Hardness, Shore 00	55	60	20	ASTM D2240
	Hardness, Shore A	10	15	< 5	ASTM D2240
	Silicone Extractable, %	7.5	6 - 7	16 - 17	Chomerics
	Percent Deflection @ Various Pressures, % @ 0.125 in @ 34 kPa (5 psi) @ 69 kPa (10 psi) @ 172 kPa (25 psi) @ 345 kPa (50 psi)	% Deflected 17 21 28 35	% Deflected 14 17 23 30	% Deflected 25 32 45 58	ASTM C165 MOD (0.125 in "A" Type, 0.50 in diameter, 0.025 in/min rate)
	Operating Temperature Range °C [°F]	-55 to 200 [-67 to 392]	-55 to 200 [-67 to 392]	-55 to 200 [-67 to 392]	--
Thermal	Thermal Impedance@ 0.040" on "G", °C-cm <sup>2</sup> /W [°C-in <sup>2</sup> /W] @ 10 psi	9.7 (1.5)	11.6 (1.8)	9.7 (1.5)	ASTM D5470
	Thermal Conductivity on "G", W/mK	1.1	0.9	1.2	ASTM D5470
	Heat Capacity, J/g-K	1	1	1	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	250	300	300	ASTM E1269
Electrical	Dielectric Strength, KVac/mm (Vac/mil)	8 (200)	8 (200)	8 (200)	ASTM D149
	Volume Resistivity, ohm-cm	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>	ASTM D257
	Dielectric Constant @ 1.000kHz	6.4	5.5	4.0	ASTM D150
	Dissipation Factor @ 1,000kHz	0.010	0.010	0.001	Chomerics
Regulatory	Flammability Rating (See UL File E140244 for Details)	V-0	V-0	V-0	UL 94
	RoHs Compliant	Yes	Yes	Yes	Chomerics Certification
	Outgassing, %TML (%CVCM)	0.50 (0.20)	0.48 (0.17)	0.83 (0.26)	ASTM E595
	Shelf Life, months from date of shipment A (G) [T]	18 (24) [6]	18 (24) [6]	18 (24) [6]	Chomerics

\*Thickness tolerance, mm(in.) ±10% nominal thickness @ 2.5mm (100 mil) or less;  
± 0.25mm (10mil) @ nominal thickness greater than 2.5mm (100 mil). Custom thicknesses may be available upon request.

## THERM-A-GAP™ 174, 274 and 574 Thermally Conductive Gap Filler Pads

### FEATURES / BENEFITS

- Broad range of hardnesses available
- Moldability for complex parts
- Good thermal performance
- High tack surface reduces contact resistance
- “T” version offers electrically insulating reinforcement with acrylic PSA
- “A” version offers high strength PSA for permanent attachment
- UL recognized V-0 flammability rating
- RoHS compliant
- Pass NASA outgassing (ASTM E595)

### TYPICAL APPLICATIONS

- Desktop computers, laptops, servers
- Telecommunications equipment
- Consumer electronics
- Automotive electronics
- Motor and engine controllers
- Cellular handsets
- Power conversion

- Memory modules
- Heatpipe assemblies
- Dual thermal / vibration dampening
- Voltage regulators

### PRODUCT ATTRIBUTES 174

- Good thermal performance
- Good moldability
- Good conformability
- Available with “T” dielectric backer

### 274

- Good thermal performance
- Excellent moldability
- Moderate conformability
- Available in ribbed configuration to reduce compressive forces
- Available with “T” dielectric backer

### 574

- Good thermal performance
- Very low deflection force for low stress, high heat load applications
- Most compliant

### HANDLING INFORMATION

These products are defined by Chomerics as “articles” according to the following generally recognized regulatory definition for articles:

An article is a manufactured item “formed to a specific shape or design during manufacturing,” which has “end use functions” dependent upon its size and shape during end use and which has generally “no change of chemical composition during its end use.” In addition, there is no known or anticipated exposure to hazardous materials/substances during routine and anticipated use of the article.

These materials are not deemed by Chomerics to require an MSDS. For further questions, please contact Chomerics at 781-939-4850.

## Ordering Information

Thermally conductive pads are available in the following formats. Contact Chomerics for custom widths, part sizes, etc.

### Distributor sheets -18” X 18”

0.020” = 69-XX-20698-ZZZZ  
0.040” = 69-XX-20684-ZZZZ  
0.070” = 69-XX-20685-ZZZZ  
0.100” = 69-XX-20672-ZZZZ  
0.130” = 69-XX-20675-ZZZZ  
0.160” = 69-XX-20686-ZZZZ  
0.200” = 69-XX-20687-ZZZZ

XX = 11 for “G” Version  
XX = 12 for “A” Version

ZZZZ = THERM-A-GAP™ Material Code

### Ribbed Sheet - 9” x 9” (274 Stock ONLY)

62-04-23111-A274 .040” RIB .031 RADII  
62-04-23111-T274 .040” RIB .031 RADII  
62-07-23112-A274 .070” RIB .031 RADII  
62-07-23112-T274 .070” RIB .031 RADII  
62-10-23113-A274 .100” RIB .062 RADII  
62-10-23113-T274 .100” RIB .062 RADII  
62-13-23114-A274 .130” RIB .062 RADII  
62-13-23114-T274 .130” RIB .062 RADII  
62-16-23115-A274 .160” RIB .062 RADII  
62-16-23115-T274 .160” RIB .062 RADII  
62-20-23116-A274 .200” RIB .062 RADII  
62-20-23116-T274 .200” RIB .062 RADII

- OEM sheets available – Typically 9” X 9”
- Custom die-cut parts on sheets, or as individual parts
- “A” version offered die-cut (up to 70 mil) on continuous rolls (higher volumes)
- Custom thicknesses available upon request (up to 1” thick)
- Custom molded designs and ribbed sheets

### Part Number Examples:

Standard OEM Sheet, .070 Thick, “G” carrier, no PSA, 174 material:  
Standard OEM Sheet, .200 Thick, “A” carrier, with PSA, 574 material:  
Custom configuration, “A” carrier, with PSA, 274 material:

61 - 07 - 0909 - G174  
62 - 20 - 0909 - A574  
69 - 12 - XXXXX - A274

(Where “XXXXX” is assigned by Chomerics at time of quotation)