THERM-A-GAP™ HCS10, 569, 570, 579 and 580

Thermally Conductive Gap Filler Pads

Description

THERM-A-GAP™ gap-filler sheets and pads offer excellent thermal properties and highest conformability at low clamping forces.

Features / Benefits

- Ultra low deflection force
- High thermal conductivity
- High tack surface reduces contact resistance
- "A" version offers high strength acrylic PSA for permanent attachment
- UL recognized V-0 flammability
- RoHS compliant

All products are available on aluminum foil "A' or on "clean break" glass "G" fiber carrier. As with all previous Chomerics gap-fillers, the "A" versions have a high strength acrylic pressure sensitive adhesive (PSA) for permanent attachment to the cold surfaces.

THERM-A-GAP™ HCS10, 569, 570, 579 and 580 Thermally Conductive Pads

	Typical Properties	HCS10	569	570	579	580	Test Method
Physical	Color	Orange / Grey Carrier	Grey	Blue	Pink	Yellow	Visual
	Supported (standard): G = Woven glass carrier - no PSA A = Aluminum foil carrier - with PSA Supported (custom): PN = PEN film carrier KT = Thermally enhanced polyimide carrier Unsupported (no carrier): 579 and 580 only - no letter notation needed	HCS10A or HCS10G	A569, G569 or 569PN	A570 or G570	A579, G579, 579PN, 579KT, or 579	A580, G580, or 580	--
	Standard Thicknesses*, inch (mm) Unsupported (no carrier): 0.120-0.200 (3.0-5.0)	0.010 - 0.200 (0.25 - 5.0)	0.010 - 0.200 (0.25 - 5.0)	0.020 - 0.200 (0.5 - 5.0)	0.010 - 0.200 (0.25 - 5.0)	0.020 - 0.200 (0.5 - 5.0)	ASTM D374
	Specific Gravity	2.0	2.2	2.2	2.9	2.9	ASTM D792
	Hardness, Shore 00	4	10	25	30	75	ASTM D2240
	Percent Deflection @ Various Pressures** (0.125 in thick sample) @ 5 psi (34 kPa) @ 10 psi (69 kPa) @ 25 psi (172 kPa) @ 50 psi (345 kPa)	% Deflected 26 36 59 73	% Deflected 20 30 50 65	% Deflected 10 15 25 35	% Deflected 22 33 55 68	% Deflected 7 10 20 30	ASTM C165 MOD (0.125 in "G" Type, 0.50 in dia. probe, 0.025 in/min rate)
	Operating Temperature Range, °F (°C)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	--
Thermal	Thermal Conductivity, W/m-K @ 25 psi	1	1.5	1.5	3	3	ASTM D5470
	Thermal Impedance, °C-in^2/W (°C-cm^2/W) @ 10 psi, @ 0.04 in. (1mm) thick, "G" version	1.5 (9.7)	1.4 (9.1)	1.4 (9.1)	0.7 (4.5)	0.7 (4.5)	ASTM D5470
	Heat Capacity, J/g-K	1	1	1	1	1	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	N/A	250	250	150	150	ASTM E831
Electrical	Dielectric Strength, V_{AC}/mil (KV_{AC}/mm)	200 (8)	200 (8)	200 (8)	200 (8)	200 (8)	ASTM D149
	Volume Resistivity, ohm-cm	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	ASTM D257
	Dielectric Constant @1,000 kHz	5.3	6.5	6.5	8.0	8.0	ASTM D150
	Dissipation Factor @ 1,000 kHz	0.013	0.013	0.013	0.010	0.010	Chomerics Test
Regulatory	Flammability Rating (See UL File E140244 for Details)	V-0	V-0	V-0	V-0	V-0	UL 94
	RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Chomerics Certification
	Outgassing, % TML (% CVCM)	0.44 (0.13)	0.42 (0.08)	0.35 (0.09)	0.19 (0.06)	0.18 (0.05)	ASTM E595
	Shelf Life, months from date of shipment G (A)	36 (18)	36 (18)	36 (18)	36 (18)	36 (18)	Chomerics

*Thickness tolerance, in(mm) ±10% nominal thickness @ 0.1in (2.5mm) or less; ± 0.01in (0.25mm) @ nominal thickness greater than 0.1in (2.5mm). Custom thicknesses may be available upon request.
**The typical deflection range is approximately 5-40%
***Laminated polyester film provides low abrasion on one side as well as improved dielectric isolation.

TYPICAL APPLICATIONS

- Telecommunications equipment
- Consumer electronics
- Automotive electronics (ECUs)
- LEDs, lighting
- Power conversion
- Desktop computers, laptops, servers
- Handheld devices
- Memory modules
- Vibration dampening

HANDLING INFORMATION

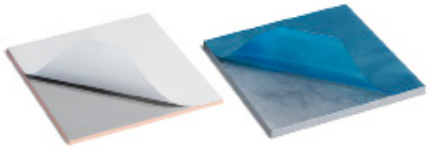
These products are defined by Chomerics as "articles" according to the following generally recognized regulatory definition for articles:

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 product.
- The product's shape, surface, and design is more relevant than its chemical composition.

These materials are not deemed by Chomerics to require an MSDS. For further questions, please contact Chomerics at 781-935-4850.



With Glass Carrier

HCS10A
With Aluminium PSA Carrier

PRODUCT ATTRIBUTES

HCS10

- Economical solution
- Highest conformability gap filler sheet

569

- Economical combination of thermal performance and conformability

570

- Best for molding complex parts and vibration dampening

579

- Combination of excellent thermal performance and conformability
- Lowest outgassing

580

- Best for molding complex parts and vibration dampening
- Lowest outgassing

Ordering Information

Part Number:

6W — **XX** — **YYYY** — **ZZZZ**

W	XX	YYYY	ZZZZ
1 = OEM Sheet - No PSA ("G" carrier and HCS10) 2 = OEM Sheet with PSA 1 side ("A" Carrier only)	Material thickness* is in ten mil increments (e.g. 10 = 0.100" or 2.54 mm) (e.g. 02 = 0.020" or 0.50 mm)	**OEM Part Number Examples** 0909 = (9" X 9" Sheet / 22.9 cm X 22.9 cm).	**THERM-A-GAP™ Material Code** **HCS10G & HCS10A** **G569 & A569** **G570 & A570** **G579 & A579** **G580 & A580** (THERM-A-GAP™ 174, 274, 574 and TS15 are legacy products and are available upon special request.)
9 = Custom configuration	11 = Custom, no PSA ("G" carrier and HCS10) 12 = Custom, with PSA 1 side ("A" Carrier only)	**Thermally conductive pads are available in the following formats.** **Distributor Part Numbers - 18" X 18" Sheets** 0.010 in = 28539 0.015 in = 28540** 0.020 in = 20698 0.030 in = 20913 0.040 in = 20684 0.050 in = 27395 0.060 in = 20991 0.070 in = 20685 0.080 in = 21259 0.100 in = 20672 0.120 in = 27102*** 0.130 in = 20675 0.140 in = 27100 0.150 in = 27101 0.160 in = 20686 0.180 in = 27103 0.200 in = 20687 **Custom configuration** (Please contact Chomerics for a pre-assigned part number, for custom widths, part sizes, etc.)	

* See typical properties table for thicknesses.
** Minimum thickness for G579 material.
*** Minimum thickness for unsupported 579/580

Custom die-cut parts on sheets, or as individual parts
"A" version offered die-cut (up to 40 mil) on continuous rolls (higher volumes)
Custom thicknesses available upon request (up to 1" thick)
Custom molded designs and ribbed sheets