Thermally Conductive Adhesives

Maximum Heat Dissipation from Electronic Assemblies

MG Chemicals offers thermally conductive epoxy adhesives for bonding heat sinks, LEDs, and other heat generating electronic components.

Features & Benefits

- Creates strong permanent thermal bonds
- Eliminates need for mechanical fasteners
- Excellent thermal conductivity (*TC*)
- Provides strong electrical insulation
- Room temperature storage
- Maintains bonds in severe environments
- Excellent chemical resistance
- Excellent mechanical stability
- A wide variety of working times (*w.t.*)

Applications

- Bonding heat sinks
- Power semiconductor devices
- Flip chip BGA heat spreaders
- Battery modules and battery packs
- LED lighting
- Power Supplies
- Automotive lighting
- Appliances

One-part

9460TC • *TC* of 0.8 W/(m·K), unlimited *w.t.*, no mixing, heat cure only

Two-part

8329TFF • *TC* of 0.8 W/(m·K), 5 min *w.t.*, dispensable, UL 94V-0 rated - flame retardant

8349TFM • *TC* of 0.9 W/(m·K), 20 min *w.t.*, dispensable, meets UL 94V-0 - flame retardant

8329TCM • *TC* of 1.4 W/(m·K), 45 min *w.t.*, non-sagging

8329TFS • *TC* of 0.8 W/(m·K), 4 hours *w.t.*, dispensable, heat cure only

8329TCS • *TC* of 1.4 W/(m·K), 4 hours *w.t.*, non-sagging, heat cure only

Dispensing accessories

Dispensing gun • 8DG-50-1-1

Mixing tips
- 8MT-50 (standard)
- 8MT-50-FT (fine flow)

Thermally Conductive Adhesives

	TWO-PART						ONE-PART
	8329TCS	**8329TCM**	**8329TFS**	**8349TFM**	**8329TFF**	**8329HTC**	**9460TC**
UNCURED PROPERTIES							
Number of components	2	2	2	2	2	2	1
Mix Ratio by Volume	1:1	1:1	1:1	1:1	1:1	1:1 by wt.	—
Mixed density [g/mL]	2.3	2.4	2.1	1.6	1.6	1.7	1.6
Working time	4 h	45 min	4 h	20 min	5 min	80–120 min	Unlimited
Room temperature cure	3 days	24 h	Heat cure	16 h	4 h	48 h	Heat cure
Heat cure [min @ °C]	120 @ 65	60 @ 65	180 @ 65	20 @ 65	15 @ 65	60 @ 65	120 @ 80
	60 @ 80	45 @ 80	80 @ 80	10 @ 80	10 @ 80	45 @ 80	60 @ 100
	20 @ 100	20 @ 100	30 @ 100	—	—	—	30 @ 120
CURED PROPERTIES							
Resistivity [Ω·cm]	2×10^{13}	9×10^{12}	1.0×10^{12}	6.5×10^{12}	7.9×10^{12}	10^{11}	7.4×10^{16}
Service temperature range [°C]	-40 to 150	-40 to 150	-40 to 150	-65 to 120	-40 to 150	-55 to 160	-65 to 150
Glass transition temperature (T_g) [°C]	8.8	46	9	80	25	90	106
CTE prior T_g [ppm/°C]	36	71	47	20	34	60	36
CTE after T_g [ppm/°C]	173	131	164	120	146	150	72
Thermal conductivity @ 25 °C [W/(m·K)]	1.4	1.4	1.2	0.9	0.8	0.9	0.8
Thermal diffusivity @ 25 °C [mm^2/s]	0.7	0.6	0.6	0.4	0.3	—	0.5
Specific heat capacity @ 25 °C [J/(g·K)]	0.9	0.9	1.0	1.4	1.4	—	1.2
Color	Silver grey	Silver grey	Silver grey	Black	Beige	Gray	White
Hardness	62D	77D	68D	92D	82D	86D	86D
Tensile strength [N/mm^2]	11	10	4.2	25	13	34	9.1
Compressive strength [N/mm^2]	43	34	42	115	65	160	78
Lap shear (stainless steel) [N/mm^2]	4.7	6.4	5.0	6.7	7.1	15	6.0
Lap shear (aluminum) [N/mm^2]	4.4	6.1	6.3	4.4	8.3	17	3.2
AVAILABLE PACKAGING							
Net contents	6 mL (2 syringe kit)	6 mL (2 syringe kit)	25 mL (Dual-syringe)	45 mL (2 jar kit)	25 mL (Dual-syringe)	400 mL (Dual-cartridge)	3 mL (Syringe)
	50 mL (2 jar kit)	50 mL (2 jar kit)	45 mL (Dual-cartridge)	200 mL (2 can kit)	45 mL (Dual-cartridge)