

# T-work7000

## High Thermal Conductive Gap Filler

LiPOLY T-work7000 offers outstanding thermal conductivity at 11.0 W/m\*K and extremely low thermal resistance under minimal force. T-work7000 offers excellent compression, filling small air gaps on uneven surfaces, ensuring an efficient and consistent transfer of heat.

### ■ FEATURES

- / Thermal conductivity: 11.0 W/m\*K
- / High compression rate
- / Extremely low thermal impedance

### ■ TYPICAL APPLICATION

- / Between CPU and heat sink
- / Between a component and heat sink
- / Flat-panel displays
- / Power supplies
- / High speed mass storage drives
- / Telecommunication hardware



### ■ CONSTRUCTION

Series	Characteristics	Configurations
T-work7000	Silicone compound with weak sticky surfaces.	Sheets form, Die-cuts parts

### ■ TYPICAL PROPERTIES

PROPERTY	T-work7000	TEST METHOD	UNIT
Color	Gray Green	Visual	-
Surface tack 2-side/1-side	2	-	-
Thickness	Customized	ASTM D374	mm
Density	3.4	ASTM D792	g/cm <sup>3</sup>
Hardness	65	ASTM D2240	Shore 000
TML	<0.1	By LiPOLY	%
Application temperature	-60~150	-	°C
ROHS & REACH	Compliant	-	-
COMPRESSION			
Deflection @10 psi	14	ASTM D5470 modify	%
Deflection @20 psi	24	ASTM D5470 modify	%
Deflection @30 psi	47	ASTM D5470 modify	%
Deflection @40 psi	55	ASTM D5470 modify	%
Deflection @50 psi	59	ASTM D5470 modify	%
ELECTRICAL			
Dielectric breakdown	8	ASTM D149	KV/mm
Surface resistivity	>10 <sup>11</sup>	ASTM D257	Ohm
Volume resistivity	>10 <sup>10</sup>	ASTM D257	Ohm-m
Dielectric constant@10MHz D <sub>k</sub>	10.4	ASTM D150	-
Dielectric constant@1GHz D <sub>k</sub>	10.4	ASTM D150	-
Dielectric constant@1.8GHz D <sub>k</sub>	11.6	ASTM D150	-
Dielectric factor@10MHz D <sub>f</sub>	0.007	ASTM D150	-
Dielectric factor@1GHz D <sub>f</sub>	0.001	ASTM D150	-
Dielectric factor@1.8GHz D <sub>f</sub>	0.021	ASTM D150	-
THERMAL			
Thermal conductivity	11.0	ASTM D5470	W/m*K
Thermal conductivity	6.5	ISO 22007-2	W/m*K
Thermal impedance@10psi	0.223	ASTM D5470	°C-in <sup>2</sup> / W
Thermal impedance@20psi	0.202	ASTM D5470	°C-in <sup>2</sup> / W
Thermal impedance@30psi	0.140	ASTM D5470	°C-in <sup>2</sup> / W
Thermal impedance@40psi	0.119	ASTM D5470	°C-in <sup>2</sup> / W
Thermal impedance@50psi	0.108	ASTM D5470	°C-in <sup>2</sup> / W
Coefficient of thermal expansion	-244.48x10 <sup>-6</sup>	ASTM E228	1/K

## ■ THERMAL IMPEDANCE & COMPRESSION

Compression Force (psi)	Thermal Impedance (°C-in <sup>2</sup> /W)			Compression (%)		
	1.0 mm	2.0 mm	3.0 mm	1.0 mm	2.0 mm	3.0 mm
10	0.223	0.388	0.579	14	15	16
20	0.202	0.327	0.341	24	34	57
30	0.140	0.200	0.216	47	60	71
40	0.119	0.146	0.172	55	69	77
50	0.108	0.127	0.139	59	73	81

Test method: ASTM D5470

## ■ RELIABILITY

Test Property	Compression Force (psi)	70°C				
		Initial	100 hrs	250 hrs	500 hrs	1000 hrs
Thermal Resistance	10	0.223	0.224	0.223	0.224	0.225
	30	0.140	0.141	0.141	0.141	0.142
	50	0.108	0.110	0.109	0.109	0.111

Test Property	Compression Force (psi)	150°C				
		Initial	100 hrs	250 hrs	500 hrs	1000 hrs
Thermal Resistance	10	0.223	0.224	0.225	0.224	0.225
	30	0.140	0.142	0.143	0.142	0.143
	50	0.108	0.110	0.111	0.109	0.108

Test Property	Compression Force (psi)	60°C / 90%RH				
		Initial	100 hrs	250 hrs	500 hrs	1000 hrs
Thermal Resistance	10	0.223	0.222	0.223	0.222	0.221
	30	0.140	0.141	0.142	0.149	0.141
	50	0.108	0.109	0.108	0.108	0.107

Test Property	Compression Force (psi)	-40°C (30min) ↔ +125°C (30min)					
		0 Cycles	100 Cycles	200 Cycles	300 Cycles	400 Cycles	500 Cycles
Thermal Resistance	10	0.223	0.223	0.224	0.223	0.224	0.223
	30	0.140	0.142	0.141	0.142	0.143	0.143
	50	0.108	0.109	0.110	0.110	0.109	0.110

Test Property	Compression Force (psi)	Ultra Low Temperature -60°C					
		Initial	100 hrs	200 hrs	300 hrs	400 hrs	500 hrs
Thermal Resistance	10	0.223	0.222	0.223	0.223	0.224	0.223
	30	0.140	0.141	0.142	0.142	0.143	0.141
	50	0.108	0.111	0.109	0.110	0.109	0.110

Test method: ASTM D5470 , Specimen thickness = 1.0mm , Unit: °C-in<sup>2</sup>/W

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