

GRAPHENE THERMAL PAD

series: GTP Series



- Thermal conductivity: 75.0W/mk.
- Excellent flexibility, resilience and thermal stability.
- Low thermal resistance.
- Highly efficient heat dissipation.
- Excellent flammability resistance.
- Can be supplied in custom shapes and sizes.

Item	GTP75	Test Method
Thermal Conductivity (W/mk)	≥75	ASTM E1461
Thickness (mm)	0.30	ASTM D374
Colour	Black	-
Density (g/cm ³)	0.6 ~ 0.9	ASTM D792
Compression Rebound Rate (%)	≥60.0	ASTM D575
Tensile Strength (Mpa)	≥0.03	ASTM D412
Oil Bleeding Rate (%)	≤3.0	-
Temperature Range (°C)	-40 ~ 150	-
Thermal Resistance (°C.cm ² /W, @40psi)	≤0.10	ASTM D5470
(°C.in ² /W, @40psi)	≤0.016	ASTM D5470

Certification Standard	Compliant
ROHS 3 (EU 2015-863)	Yes
REACH SVHC	Yes
Halogen Free	Yes

Applications: - Semiconductor heat sink
 - Vehicle navigator
 - Communication and power equipment
 - Graphics card, memory module
 - LED lighting equipment
 - LCD and plasma TV

Thermal Conductivity Test

Certification Standard	Sample 1	Sample 2	Sample 3	Average
Thermal Conductivity (W/mk) - @0.3mm	76.8	77.1	76.3	76.7

Test Equipment/Standard: Test standard ASTM E1461 using a NETZSCH LFA 467 HT laser flash apparatus.

Sample Preparation: Sample size 10x10x0.3mm used. Uniform carbon black coated sprayed on the surface and samples placed flat on the test platform.

Test Method: Set the test temperature, then evacuate the chamber or introduce protective gas and wait until the furnace temperature stabilizes. The instrument emits a short laser pulse onto the front surface of the sample, while an infrared detector records the temperature rise curve on the rear surface in real time.



Thermal Resistance Test

Test Project	Test Data	Pressure (psi)			
	Sample	10psi	20psi	30psi	40psi
Thermal Resistance at 10-40psi (°C-in ² /W) @ 0.3cm	1	0.016	0.016	0.015	0.015
	2	0.017	0.016	0.015	0.015
	3	0.016	0.016	0.015	0.015
	Average value	0.016	0.016	0.015	0.015
Thermal Resistance at 10-40psi (°C-cm ² /W) @ 0.3cm	1	0.106	0.100	0.095	0.094
	2	0.108	0.101	0.095	0.096
	3	0.105	0.100	0.096	0.095
	Average value	0.106	0.100	0.095	0.095

Test Equipment/Standard: Test standard ASTM D5470 using a LW-9389 thermal conductivity tester.

Sample Preparation: Sample size 25.4x25.4x0.3mm used. Sample placed flat on test platform.

Test Method: Open the software and select calibration. Set parameters to 40psi and 80°C, perform thickness zeroing, and set time to 15 mins.

Select thermal resistance test. Set temperature to 80°C, set pressure to 10psi, pressure increment to 10psi and final pressure to 40psi. Start the test and the system then automatically outputs the results.

Resilience Test

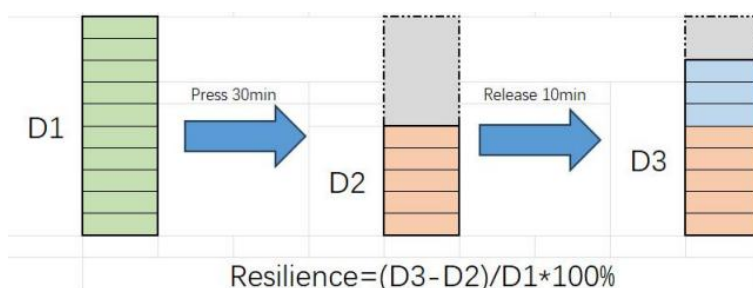
Test Project	Test Data			
	1	2	3	Average Value
Rebound Rate (%)	31	29	31	30

Test Equipment/Standard: Test standard ASTM D575 using a computer-controlled testing machine (100N).

Sample Preparation: Sample size 25x25x0.3mm.

Test Method: After equipment calibration and zeroing set the force to 20N and select compression test. Zero the force value before testing. Apply 2N to bring the fixture into contact with the sample surface.

Set compression speed to 0.5mm/min, deformation to 50%, and holding time to 30min. The initial thickness of the sample is D1, the thickness after compression is D2, and the thickness measured after standing for 10 minutes is D3. The rebound rate is calculated as: $(D3-D2)/D1 \times 100\%$.



Oil Bleed Test

Item	Test Data			
	1	2	3	Average Value
Oil bleed rate (%)	1.96	1.73	2.04	1.91

Test Method

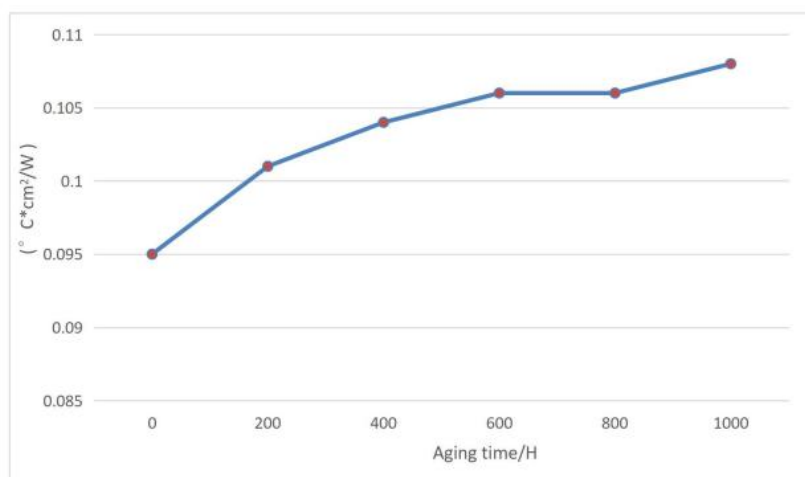
- (1) Take a sample of 25.4x25.4x0.3mm and weight the initial mass before testing, using an analytical balance, recorded as W0.
- (2) Place one layer of filter paper or absorbent paper on both the top and bottom of the thermal material. Stack 1-2 layers of fibreglass cloth (total mass recorded as W1) above and below, clamp with the filter paper (absorbent paper), then tighten with a fixture. Use spacers to compress the sample by 40%.
- (3) Place the fixture with the sample into a constant temperature drying oven at 125°C for 48 hours. After completion, remove and carefully peel off the filter paper (absorbent paper). Weigh and record the mass of the baked sample (plus fibreglass cloth) as W2.
- (4) Oil bleed (%) = $(W1 - W2) / W0 \times 100\%$.

High Temperature Aging

Place sample size 50x50x0.3mm into a high temperature oven at 125°C for 1000 hours. After completion, test thermal resistance at 40psi and record the data (as shown in the below graph).



High temperature aging test



As shown in the above data, the graphene thermal pad demonstrates stable thermal resistance performance during short-term aging tests. After 1000 hours, the thermal resistance increases by 13.7%, which is within the allowable variation range.

Recommended Storage Condition: Store in a well-ventilated, cool and dry area away from direct sunlight.

Shelf Life: Minimum 12 months from date of manufacture.

For copy of SDS document or further test data please contact our [sales team](#).

ANNOTATION

All specifications shown herein are typical values and are not guaranteed. It is recommended to test in the application for suitability.