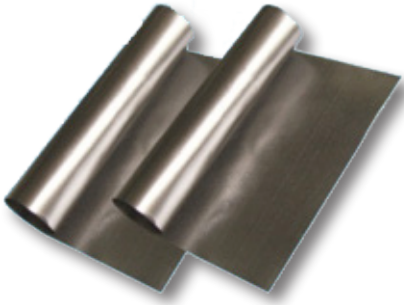


# High Thermal Conductive Graphite Sheet

## Preliminary



### HIGH THERMAL CONDUCTIVE GRAPHITE SHEET

Tgon™ 9000 is a synthetic graphite thermal interface material consisting of carbon in-plane mono-crystal structure.

Tgon™ 9000 is ultra-thin, light-weight, flexible and offers excellent in-plane thermal conductivity. Ideal for variety of heat spreading applications where in-plan thermal conductivity dominates and limited spaces.

### FEATURES AND BENEFITS

- Thermal Conductivity: 500 to 1900W/mK
- 4 times thermal conductivity than copper
- Reduce hot spots and protect sensitive areas
- Enables slim device designs with ultra-thin of 17um
- Light weight with density of 2.05~2.25 5g/cm<sup>3</sup> for thickness of 17um & 25um
- Flexible (Withstand more than 10,000 times bending with R=5mm)
- Ease of manufacturing for high volume production

### MARKETS

- Handheld devices
- Mobile computing
- Display
- Lighting
- Telecom

### PRODUCT NAME AND KEY PROPERTIES AS BELOW:

Product Name	Test Method	Tgon 9017	Tgon 9025	Tgon 9040	Tgon 9070	Tgon 9100
Thickness (mm)	ASTM D374	0.017+/-0.005	0.025+/-0.005	0.04+/-0.005	0.07+/-0.01	0.1+/-0.01
Thermal conductivity (W/mK)	X,Y direction	1650~1900	1500~1700	1150~1400	700~1000	500~700
	Z direction	15	15	15	15	15
Thermal diffusivity (cm <sup>2</sup> /s)	ASTM E1461	9	9	8	7	7
Density (g/cm <sup>3</sup> )	ASTM D792	2.05~2.25	2.05~2.25	1.65~1.85	1.0~1.3	0.7~1.0
Specific heat (50°C)(J/gK)	ASTM E1269	0.85	0.85	0.85	0.85	0.85
Heat resistance (°C)	Over 100 hours of testing	400	400	400	400	400
Extensional strength (MPa)	X,Y direction	39	28	23	20	19.2
	Z direction	0.1	0.4	0.4	0.4	0.65
Bending test(times) (R5/180°)	ASTM D2176	10,000 or more	10,000 or more	10,000 or more	10,000 or more	10,000 or more
Electric conductivity (S/cm)	ASTM E1269	20000	20000	20000	96000	96000


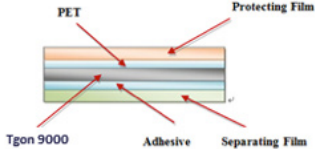
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Europe: +49.8031.2460.0  
Asia: +86.755.2714.1166

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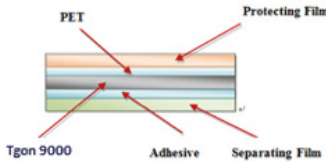
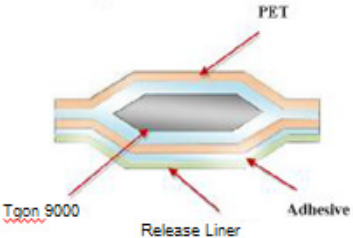
## Preliminary

### PRODUCT STRUCTURE

- There are two types of product structure as follows
  - Tgon™9000 series: Tgon™9000 sheet only
  - Tgon™9000PA series: Tgon™9000 with one-side PET film & one-side adhesive
- Below is the product structures available:

Type	Graphite Only	Laminated (Insulation & Adhesive)
	Tgon 9000 series	Tgon 9000PA series
Structure		
Features	Graphite Sheet	With PET film & Adhesive
Thickness	Graphite: 17µm, 25µm, 40µm, 70µm, 100µm	PET film: 5µm, 10µm Adhesive: 5µm, 10µm, 30µm Graphite: 17µm, 25µm, 40µm, 70µm, 100µm
Standard Size	180 x 220mm	180 x 220mm

- Die-cut edge options:

Type	Flush Edge	Envelope Seal
	Tgon 9000PA series	Tgon 9000EPA series
Structure		

### PART NUMBER INFORMATION

T	g	o	n	9	0	2	5	P	A	,	1	0	1	0				
Product Code											PET Thickness		Adhesive Thickness					
Graphite Thickness					Structure & Edge Options					05=>	5µm	05=>	5µm					
17=>					PA Laminated with PET & Adhesive with flush edge					10=>	10µm	10=>	10µm					
25=>					EPA Laminated with PET & Adhesive with envelope seal							30=>	30µm					
40=>																		
70=>																		
100=>																		

THR-DS-TGON 9000 032415