

# **B** Aismalibar

Improving dielectric isolation  
and fast thermal transmission

TIM: THERMAL INTERFACE MATERIAL



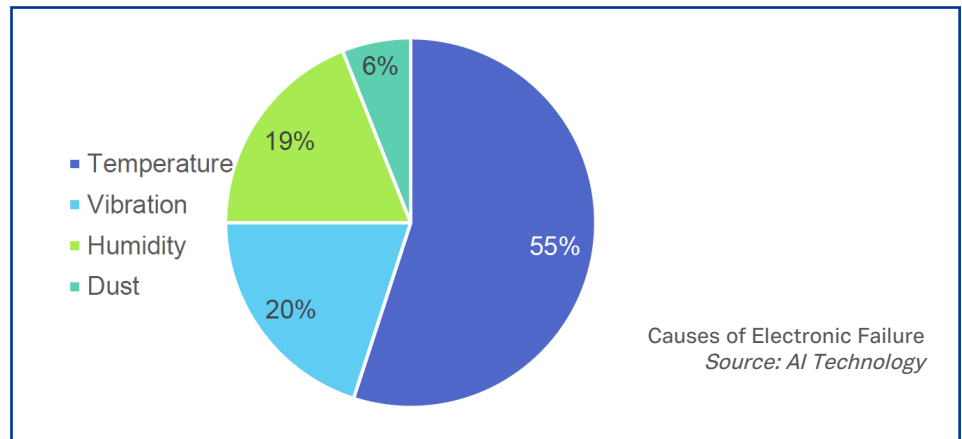
COOLING ELECTRONICS

[www.aismalibar.com](http://www.aismalibar.com)

# WHY USE AISMALIBAR'S THERMAL INTERFACE MATERIALS?

Aismalibar's Thermal Interface Materials are designed to overcome the main problems that we find working with components that need high thermal dissipation.

They are clean, fast, and efficient thermal interface materials used to solve the interface between MPCB/ Power Components and heat sinks, improving dielectric isolation and fast thermal transmission.



The new TIMs developed by Aismalibar eliminate air gaps from the interface, reducing thermal resistance.

The reduction of air gaps is automatically converted into a reduction of the junction temperature and copper lead frames.

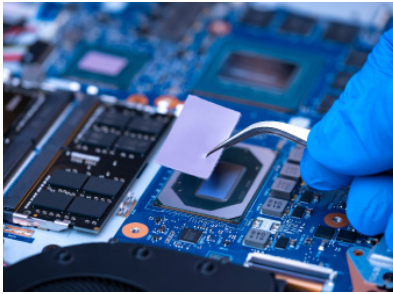
# TIM: THERMAL INTERFACE MATERIAL

Aismalibar Thermal Interface Materials (TIMs) are divided into two main areas differentiated from each other by the need, or not, to have dielectric capacity.

AISMALIBAR TIMs	
LOW DIELECTRIC STRENGTH	HIGH DIELECTRIC STRENGTH
<ul style="list-style-type: none"> <li>• PHASE CHANGE</li> <li>• THERMAL GREASE</li> <li>• THERMAL ADHESIVE TAPE</li> </ul>	<ul style="list-style-type: none"> <li>• THERMAL FILM</li> <li>• SILICON PAD</li> <li>• ACRILIC PAD</li> <li>• BOND SHEET CURED</li> <li>• THERMAL GEL</li> <li>• THERMAL ADHESIVE</li> </ul>

# LOW DIELECTRIC STRENGTH

## PC - PHASE CHANGE

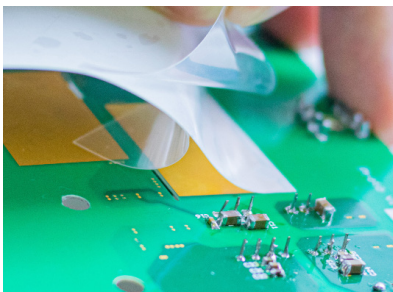


Phase Change Materials (PCMs) have several advantages, including high energy storage density, low volume change during phase transition, and the ability to maintain a constant temperature during thermal energy storage and release. They can also reduce energy consumption and costs in buildings and industrial applications, and can be integrated into existing systems with minimal modifications.

- High frequency microprocessor
- Computer
- Power adapter
- Audio video equipment
- LED lighting products

PHASE CHANGE MATERIAL	Color	Total Thickness	Phase Change Softening Temperature	Reinforce Carrier	Thermal Conductivity
PCA0P30055130	Grey	0.127 mm	50 / 65	Aluminium	3.0 W/mK
PC00P30055130	Grey	0.127 mm	50 / 55	-	3.0 W/mK
PC00P50055130	Grey	0.127 mm	50 / 55	-	5.0 W/mK
PCL0P30055130	Grey	0.10 / 5.0 mm	45 / 55	-	3.0 W/mK
PCL0P60055250	Grey	0.10 / 5.0 mm	45 / 55	-	6.0 W/mK
PC00P80055250	Grey	0.10 / 5.0 mm	45 / 55	-	8.0 W/mK

## TT - THERMAL ADHESIVE TAPE



An adhesive film with two-sided adhesive combined with thermal transmission properties based on acrylic resin, PSA (pressure sensitive adhesive). Dual-core technology ensures greater adhesion over time. It is ideal for improving the wetting between rough surfaces allowing the conformation of the surface ensuring good anchoring and excellent thermal transmission.

In the selection of a TIM, good wetting is very important. The Thermal Adhesive TT50 reduces contact resistance between heat-generating and heatsink components by filling air gaps between contact surfaces.

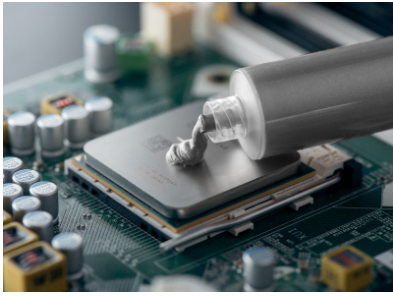
It has been designed to conform to surface irregularities, eliminate air gaps, and improve heat flow. Aismalibar thermal adhesive can be supplied in 50 and 100-micron thickness.

- High mechanical adhesion
- Improves wetting of rough surfaces and reduces air cavities
- Ideal for electronic applications
- Excellent thermal transmission
- Excellent performance against vibrations
- Supplied in Sheets or rolls

THERMAL ADHESIVE TAPE	REFERENCE	Total Thickness (µm)	Dielectric Capacity (KV)	Thermal Resistance Rth (K/W)
Thermal Tape 50 µm	TT50	50	0,3	0,097
Thermal Tape 100 µm	TT100	100	0,5	0,195

# TGR - THERMAL GREASE

Thermal grease, also known as a thermal compound, offers several advantages, including high thermal conductivity, low thermal resistance, and excellent heat transfer properties. It fills gaps and irregularities between components, reducing the risk of overheating and improving the overall performance and lifespan of electronic devices.



Thermal grease is easy to apply and remove, making it ideal for testing and prototyping. It is also non-toxic and non-corrosive, making it safe for use in sensitive applications such as medical devices, IGBT, and power components.

- High-frequency microprocessor
- Computer
- Power adapter
- Audio video equipment
- LED lighting products

THERMAL GREASE	Color	Viscosity 25°C	Aplicate Temperature	Dielectric Capacity	Thermal Conductivity
TGR1S302400030	White	240 K cps	-45 to 200 °C	-	3.0 W/mK
TGR1S504500030	Grey	450 K cps	-45 to 200 °C	-	5.0 W/mK

# TAD - THERMAL ADHESIVE

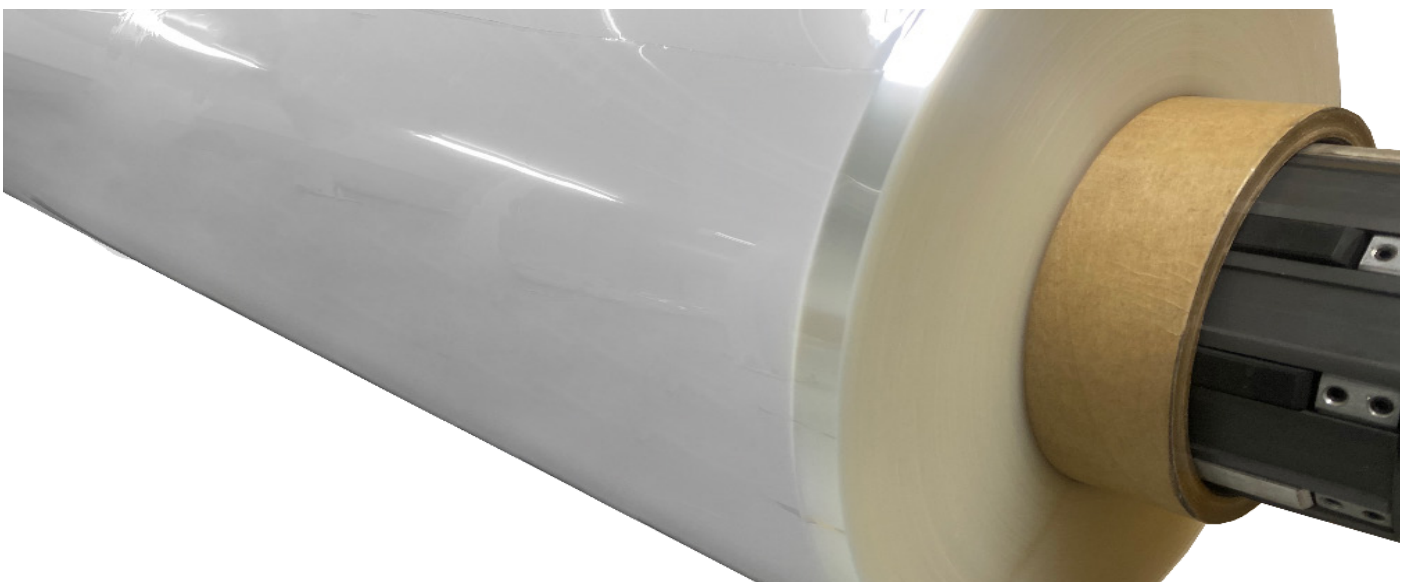
Thermal adhesive offers several advantages, including excellent thermal conductivity, high-strength bonding, and resistance to high temperatures and environmental stress. It provides a reliable and permanent solution for attaching heat sinks, electronic components, and other materials requiring thermal management.



Thermal adhesive is easy to apply, allowing for precise positioning and customization. It is also environmentally friendly and has a long lifespan, making it a sustainable choice for various industries. Additionally, thermal adhesive can be formulated to cure quickly, reducing production time and increasing efficiency.

- LED lighting
- Cooling chassis component
- Rack or other type of heat dissipation
- Heat pipe assembly
- Motor control
- Telecom hardware

THERMAL ADHESIVE	Color	Density	Dry time	Dielectric Capacity AC	Thermal Conductivity
TAD1S100300	White	2.4 g/cm <sup>3</sup>	5 / 10 min	>20000 V/mm	1.0 W/mK



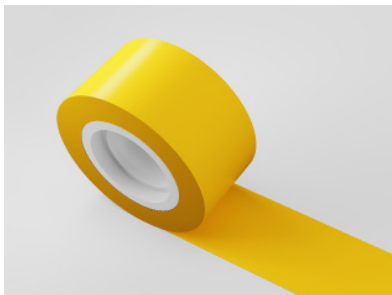
# HIGH DIELECTRIC STRENGTH

These materials are often characterized by their high dielectric strength, which is the maximum electric field that a material can withstand without breaking down or experiencing electrical failure.

## SPI - THERMAL FILM

Polyamide with a silicone coating offers several advantages, including high strength and flexibility and excellent resistance to abrasion, chemicals, and UV radiation. The silicone coating provides additional protection against moisture and high temperatures, making it suitable for use in harsh environments.

The material is also lightweight and easy to handle, making it ideal for applications where weight and space are a concern. Additionally, the combination of polyamide and silicone allows the material to be molded into complex shapes, offering design flexibility for a wide range of applications, including automotive, aerospace, and industrial uses. The reinforced polyamide will grant excellent dielectric strength.



- Power
- Adapter
- Car electronics
- Communication equipment
- Motor controller
- High-pressure interface
- Semiconductor optoelectronic products

THERMAL FILM	Color	Total Thickness	Operating Temperature	Dielectric Capacity AC	Reinforce Carrier	Thermal Conductivity
SPI2S0945120	Yellow	0.10 ± 0.02 mm	-50 to 200	>6 KV	PI	0.9 W/mK
SPI2S1290160	Yellow	0.16 ± 0.02 mm	-50 to 200	>6 KV	PI	1.3 W/mK

## SP - SILICON PAD

Silicone pads offer several advantages, including excellent thermal conductivity, electrical insulation, and resistance to high temperatures and harsh chemicals. They are flexible, conformable, and can be easily cut to size, making them ideal for a wide range of applications such as thermal management, electronic insulation, and gasketing.

Silicone pads provide a reliable and cost-effective solution for improving heat dissipation and reducing the risk of overheating electronic devices. They are also environmentally friendly and have a long lifespan, making them a sustainable choice for various industries.

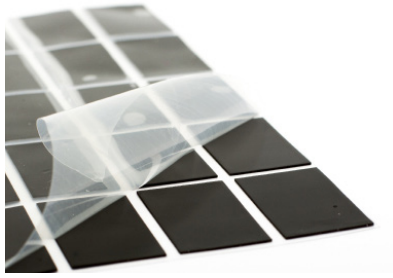


- Semiconductor heat sink
- Vehicle navigator
- Communication & power equipment
- Graphics card, memory module
- LED lighting equipment

SILICON PAD	Color	Total Thickness	Hardness Shore 00	Dielectric Capacity AC	Thermal Conductivity
SP01S1030500	Blue, Grey	0.15 - 10.0 mm	30 - 90	>200 V/mil	1.0 W/mK
SP01S2535500	Grey	0.15 - 10.0 mm	35 - 90	>200 V/mil	2.5 W/mK
SP01S4050500	Grey	0.5 - 10.0 mm	50 - 90	>200 V/mil	4.0 W/mK
SP01S8040500	Grey	0.5 - 5.0 mm	80	>200 V/mil	8.0 W/mK
SP01S6040500	Grey	0.5 - 5.0 mm	50 - 90	>2 KV@0.5mm >4 KV@0.75mm	6.0 W/mK



# AP - ACRYLIC PAD



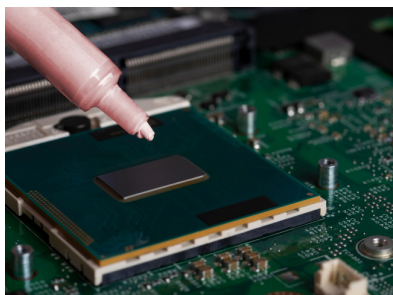
Acrylic pads offer several advantages, including high thermal conductivity, excellent electrical insulation, and resistance to chemicals, moisture, and UV radiation. They are flexible, conformable, and can be easily cut to size, making them ideal for a wide range of applications such as thermal management, electronic insulation, and gasketing.

Acrylic pads provide a reliable and cost-effective solution for improving heat dissipation and reducing the risk of overheating electronic devices. They are also environmentally friendly and have a long lifespan, making them a sustainable choice for various industries. Acrylic pads are used where silicon is forbidden due to cross-contamination.

- Power battery packs
- Vehicle navigator
- Optical precision equipment
- Automotive engine control equipment
- High-end industrial control and medical electronics

ACRYLIC PAD	Color	Reinforce Carrier	Total Thickness	Hardness Shore 00	Dielectric Capacity AC	Thermal Conductivity
AP01A1040500	White	-	0.25 - 5.0 mm	45 - 90	>200 V/mil	1.0 W/mK
APG1A2040500	White	Glass	0.5 - 5.0 mm	65 - 90	>200 V/mil	2.0 W/mK
AP01A5040500	Off-white	-	0.5 - 5.0 mm	65 - 90	>200 V/mil	3.0 W/mK
AP01A6040500	Pink	-	0.5 - 5.0 mm	75	>200 V/mil	6.0 W/mK
AP01A8040500	Light Grey	-	0.5 - 5.0 mm	70	>200 V/mil	8.0 W/mK

# TGL - THERMAL GEL



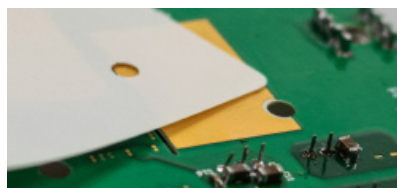
Thermal gels are highly efficient at transferring heat between components, providing excellent thermal conductivity and reducing thermal resistance. They can conform to irregular shapes and surfaces, filling gaps and minimizing air pockets, which improves heat transfer and reduces the risk of overheating. Thermal gels are also easy to apply and remove, making them ideal for testing and prototyping. They are non-toxic and non-corrosive, making them safe for use in sensitive applications such as electronics and medical devices.

Additionally, thermal gels can be formulated to provide a range of thermal conductivities, making them suitable for a wide range of applications that require effective heat management.

- Hard disk, mobile phone
- Optical precision equipment
- Mobile and communication equipment
- Automobile engine control equipment
- High-end industrial control and medical electronics

THERMAL GEL	Color	Density	Aplicate Temperature	Dielectric Capacity AC	Components	Thermal Conductivity
TGL1S102500030	Pink	2.0 g/cm <sup>3</sup>	-50 / 200 °C	>200 V/mil	1	1.0 W/mK
TGL1S304000030	Pink	3.0 g/cm <sup>3</sup>	-50 / 200 °C	>200 V/mil	1	3.0 W/mK
TGL1S407000030	Pink	3.1 g/cm <sup>3</sup>	-50 / 200 °C	>200 V/mil	1	4.0 W/mK
TGL1S609000030	Pink/Grey	3.3 g/cm <sup>3</sup>	-50 / 200 °C	>200 V/mil	1	6.0 W/mK
TGL2S202200030	Pink	2.5 g/cm <sup>3</sup>	-50 / 200 °C	>200 V/mil	2	2.0 W/mK
TGL2S502200030	Grey	3.2 g/cm <sup>3</sup>	-50 / 200 °C	6000 V	2	5.0 W/mK
TGL2S802200030	Grey	3.3 g/cm <sup>3</sup>	-50 / 200 °C	8000 V	2	8.0 W/mK

# BOND SHEET CURED GLASS REINFORCED



BOND SHEET CURED is a reinforced dielectric polymerized interface material designed for high dielectric isolation and low thermal resistance.

Ultra-thin dielectric layer with high dielectric strength, high thermal conductivity, and low thermal resistance, which efficiently dissipates the heat generated by the power components to the cooling elements.

- Semiconductor heat sink
- Vehicle navigator
- Communication & power equipment
- Power battery packs
- High-end industrial control and medical electronics

BOND SHEET CURED - 2,2 W/MK	REFERENCE	Total Thickness (μm)	Dielectric Capacity (KV)	Thermal Resistance Rth (K/W)
Bond Sheet Cured 70	BSC 70	70	≥4	0,041
Bond Sheet Cured 70 + 1x Gap Filler	BSC 70 1GF50	120	≥4	0,070
Bond Sheet Cured 70 + 2x Gap Filler	BSC 70 2GF50	170	≥4	0,099
Bond Sheet Cured 70 + 1x Thermal Tape + 1x Gap Filler	BSC 70 1TT50 1GF50	170	≥4	0,119
Bond Sheet Cured 70 + 1x Thermal Tape	BSC 70 1TT50	120	≥4	0,090
Bond Sheet Cured 70 + 2x Thermal Tape	BSC 70 2TT50	170	≥4	0,138
Bond Sheet Cured 100	BSC 100	100	≥6	0,058
Bond Sheet Cured 100 + 1x Gap Filler	BSC 100 1GF50	150	≥6	0,088
Bond Sheet Cured 100 + 2x Gap Filler	BSC 100 2GF50	200	≥6	0,117
Bond Sheet Cured 100 + 1x Thermal Tape + 1x Gap Filler	BSC 100 1TT50 1GF50	200	≥6	0,136
Bond Sheet Cured 100 + 1x Thermal Tape	BSC 100 1TT50	150	≥6	0,107
Bond Sheet Cured 100 + 2x Thermal Tape	BSC 100 2TT50	200	≥6	0,156

BOND SHEET CURED HIGH TG180°C - 3,2W/MK	REFERENCE	Total Thickness (μm)	Dielectric Capacity (KV)	Thermal Resistance Rth (K/W)
Bond Sheet Cured 80μm High Tg (ASTM 5476)	BSC 80 HTG	80	≥4	0,031
Bond Sheet Cured 80μm High Tg + Thermal Tape	BSC 80 HTG 1TT50	130	≥4	0,080
Thermal Tape + Bond Sheet Cured 80μm High Tg + Thermal Tape	BSC 80 HTG 2TT50	180	≥4	0,128
Air Gap Filler + Bond Sheet Cured 80μm High Tg + Thermal Tape	BSC 80 HTG 1TT50 1GF50	180	≥4	0,099
Bond Sheet Cured 80μm High Tg + Air Gap Filler	BSC 80 HTG 1GF50	130	≥4	0,051
Air Gap Filler + Bond Sheet Cured 80μm High Tg + Air Gap Filler	BSC 80 HTG 2GF50	180	≥4	0,070

# BOND SHEET CURED GLASS FREE

BOND SHEET CURED GLASS FREE - 3,2W/MK	REFERENCE	Total Thickness (μm)	Dielectric Capacity (KV)	Thermal Resistance Rth (K/W)
Bond Sheet Cured Glass Free 80μm	BSC GF 80	80	≥4	0,031
Bond Sheet Cured Glass Free 80μm + Thermal Tape	BSC GF 80 1TT50	130	≥4	0,080
Thermal Tape + Bond Sheet Cured Glass Free 80μm + Thermal Tape	BSC GF 80 2TT50	180	≥4	0,128
Air Gap Filler + Bond Sheet Cured Glass Free 80μm + Thermal Tape	BSC GF 80 1TT50 1GF50	180	≥4	0,099
Bond Sheet Cured Glass Free 80μm High Tg + Air Gap Filler	BSC GF 80 1GF50	130	≥4	0,051
Air Gap Filler + Bond Sheet Cured Glass Free 80μm + Air Gap Filler	BSC GF 80 2GF50	180	≥4	0,070
Bond Sheet Cured Glass Free 100μm	BSC GF 100	100	≥5,5	0,038
Bond Sheet Cured Glass Free 100μm + Thermal Tape	BSC GF 100 1TT50	150	≥5,5	0,088
Thermal Tape + Bond Sheet Cured Glass Free 100μm + Thermal Tape	BSC GF 100 2TT50	200	≥5,5	0,136
Air Gap Filler + Bond Sheet Cured Glass Free 100μm + Thermal Tape	BSC GF 100 1TT50 1GF50	200	≥5,5	0,107
Bond Sheet Cured Glass Free 100μm + Air Gap Filler	BSC GF 100 1GF50	150	≥5,5	0,059
Air Gap Filler + Bond Sheet Cured Glass Free 100μm + Air Gap Filler	BSC GF 100 2GF50	200	≥5,5	0,078



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