Aismalibar

Aismalibar has developed a family of Thermal Interface Materials (TIMs) for a wide area of electronic application fields, dividing it into two main areas differentiated from each other by the need, or not, to have dielectric capacity.

The dielectric requirement of a TIM is determined by the electronic device, its operating voltage, and the applicable regulations regarding ground insulation.

Aismalibar has additionally developed a series of applicable surfaces on our TIMs differentiated by whether or not they need to be self-adhesive. Both surfaces serve, in turn, to reduce the air cavities that exist between the surfaces of the TIMs and the heatsinks or electronic components.

Adhesive	Low Dielectric Strength	High Dielectric Strength
Self Adhesive	TT50 TT100	BSC 70/100+ 1TT50 BSC 70/100 +2TT50 BSC 70/100 +1TT50 + 1GF30 BSC 70/100 HTG + 1TT50 BSC80 HTG + 2TT50 BSC80 HTG + 1TT50 + 1GF30 ICU80 + 1TT50 ICU80 + 2TT50 ICU80 + 1TT50 + 1GF30
Not Adhesive	CU30 + 1GF30 CU30 + 2GF30	BSC 70/100 ICU 80 BSC 70/100 +1 GF30 BSC 70/100 +2 GF30 BSC 80 HTG + 1GF30 BSC 80 HTG + 2GF30

BSC 70 = Bond Sheet Cured 2,2W - 70µm
BSC 100 = Bond Sheet Cured 2,2W - 100µm
BSC 80 HTG = Bond Sheet Cured High Tg - 3,2W - 80µm
ICU = Isolcopper 80µm

TT50 = Thermal Tape 50µm
TT100 = Thermal Tape 100µm
GF30 = Air Gap Filler 30µm
CU30 = Copper 30µm

COOLING ELECTRONICS

TIM Product range

High Dielectric Strength TIM

TIM WITH STANDARD Tg120ºC - 2,2W/mK	REFERENCE	Bond Sheet Cured (µm)	Air Gap Filler (µm)	Isol copper (µm)	Thermal Tape (µm)	Total Thickness (µm)	Dielectric capacity (KV)	Thermal Impedance (Kcm²/W)	Thermal Resistance Rth (K/W)
Bond Sheet Cured 70µm (No paste)	BSC 70	70	-	-	-	70	4,0	1,167	0,136
Bond Sheet Cured 70µm (ASTM 5476)	BSC 70	70	-	-	-	70	4,0	0,350	0,041
Bond Sheet Cured 100µm (No paste)	BSC 100	100	-	-	-	100	6,0	1,667	0,195
Bond Sheet Cured 100µm (ASTM 5476)	BSC 100	100	-	-	-	100	6,0	0,500	0,058
Bond Sheet Cured 70µm + Thermal Tape	BSC 70 1TT50	70	-	-	50	120	4,5	0,667	0,078
Bond Sheet Cured 100µm + Thermal Tape	BSC 100 1TT50	100	-	-	50	150	6,5	0,833	0,097
Thermal Tape + Bond Sheet Cured 70µm + Thermal Tape	BSC 70 2TT50	70	-	-	2 x 50	170	5,0	0,944	0,110
Thermal Tape + Bond Sheet Cured 100µm + Thermal Tape	BSC 100 2TT50	100	-	-	2 x 50	200	7,0	1,111	0,130
Air Gap Filler + Bond Sheet Cured 70µm + Thermal Tape	BSC 70 1TT50 1GF30	70	30	-	50	150	4,7	0,789	0,092
Air Gap Filler + Bond Sheet Cured 100µm + Thermal Tape	BSC 100 1TT50 1GF30	100	30	-	50	180	6,7	0,947	0,111
Bond Sheet Cured 70µm + Air Gap Filler	BSC 70 1GF30	70	30	-	-	100	4,2	0,588	0,069
Bond Sheet Cured 100µm + Air Gap Filler	BSC 100 1GF30	100	30	-	-	130	6,2	0,765	0,089
Air Gap Filler + Bond Sheet Cured 70µm + Air Gap Filler	BSC 70 2GF30	70	2 x 30	-	-	130	4,4	0,619	0,072
Air Gap Filler + Bond Sheet Cured 100µm + Air Gap Filler	BSC 100 2GF30	100	2 x 30	-	-	160	6,4	0,762	0,089
TIM WITH HIGH Tg180ºC - 3,2W/mK	**REFERENCE**	**Bond Sheet Cured (µm)**	**Air Gap Filler (µm)**	**Isol copper (µm)**	**Thermal Tape (µm)**	**Total Thickness (µm)**	**Dielectric capacity (KV)**	**Thermal Impedance (Kcm²/W)**	**Thermal Resistance Rth (K/W)**
Bond Sheet Cured 80µm High Tg (No paste)	BSC 80 HTG	80	-	-	-	80	4,0	0,727	0,085
Bond Sheet Cured 80µm High Tg (ASTM 5476)	BSC 80 HTG	80	-	-	-	80	4,0	0,258	0,030
Bond Sheet Cured 80µm High Tg + Thermal Tape	BSC 80 HTG 1TT50	80	-	-	50	130	4,5	0,684	0,080
Thermal Tape + Bond Sheet Cured 80µm High Tg + Thermal Tape	BSC 80 HTG 2TT50	80	-	-	2 x 50	180	5,0	0,857	0,100
Air Gap Filler + Bond Sheet Cured 80µm High Tg + Thermal Tape	BSC 80 HTG 1TT50 1GF30	80	30	-	50	160	4,7	0,615	0,072
Bond Sheet Cured 80µm High Tg + Air Gap Filler	BSC 80 HTG 1GF30	80	30	-	-	110	4,2	0,524	0,061
Air Gap Filler + Bond Sheet Cured 80µm High Tg + Air Gap Filler	BSC 80 HTG 2GF30	80	2 x 30	-	-	140	4,4	0,467	0,055
Isolcopper 80µm (No paste)	ICU 80 HTG	-	-	80	-	80	2,0	0,417	0,049
Isolcopper 80µm (ASTM 5476)	ICU 80 HTG	-	-	80	-	80	2,0	0,200	0,023
Isolcopper 80µm + Air Gap Filler	ICU 80 HTG 1GF30	-	30	80	-	110	2,2	0,409	0,048
Air Gap Filler + Isolcopper 80µm + Air Gap Filler	ICU 80 HTG 2GF30	-	2 x 30	80	-	140	2,4	0,375	0,044
Air Gap Filler + Isolcopper 80µm + Thermal Tape	ICU 80 HTG 1TT50 1GF30	-	30	80	50	160	2,7	0,519	0,061
Isolcopper 80µm + Thermal Tape	ICU 80 HTG 1TT50	-	-	80	50	130	2,5	0,579	0,068
Thermal Tape + Isolcopper 80µm + Thermal Tape	ICU 80 HTG 2TT50	-	-	80	2 x 50	180	2,7	0,762	0,089

Low Dielectric Strength TIM

TIM WITH LOW DIELECTRIC STRENGTH	REFERENCE	Bond Sheet Cured (µm)	Air Gap Filler (µm)	Copper (µm)	Thermal Tape (µm)	Total Thickness (µm)	Dielectric capacity (KV)	Thermal Impedance (Kcm²/W)	Thermal Resistance Rth (K/W)
Thermal Tape 50µm	TT50	-	-	-	50	50	0,3	0,417	0,049
Thermal Tape 100µm	TT100	-	-	-	100	100	0,5	0,833	0,097
Coperfiller: Air Gap Filler + Copper 30µm + Air Gap Filler	CU30 2GF30	-	2 X 30	30	-	90	0,2	0,200	0,023

Benmayor
Aismalibar

AISMALIBAR HEADQUARTER
Gabriel Benmayor S.A.
Bach, 2-B. Pol. Ind. Foinvasa
08110 Montcada i Reixac
Barcelona, Spain
info@aismalibar.com
www.aismalibar.com
T +34 935 724 161
F +34 935 724 165

AISMALIBAR BARCELONA FACTORY
Av Ferreria 76-78
Pol. Ind. Foinvasa
08110 Montcada i Reixac
Barcelona, Spain
info@aismalibar.com
www.aismalibar.com
T +34 935 660 160

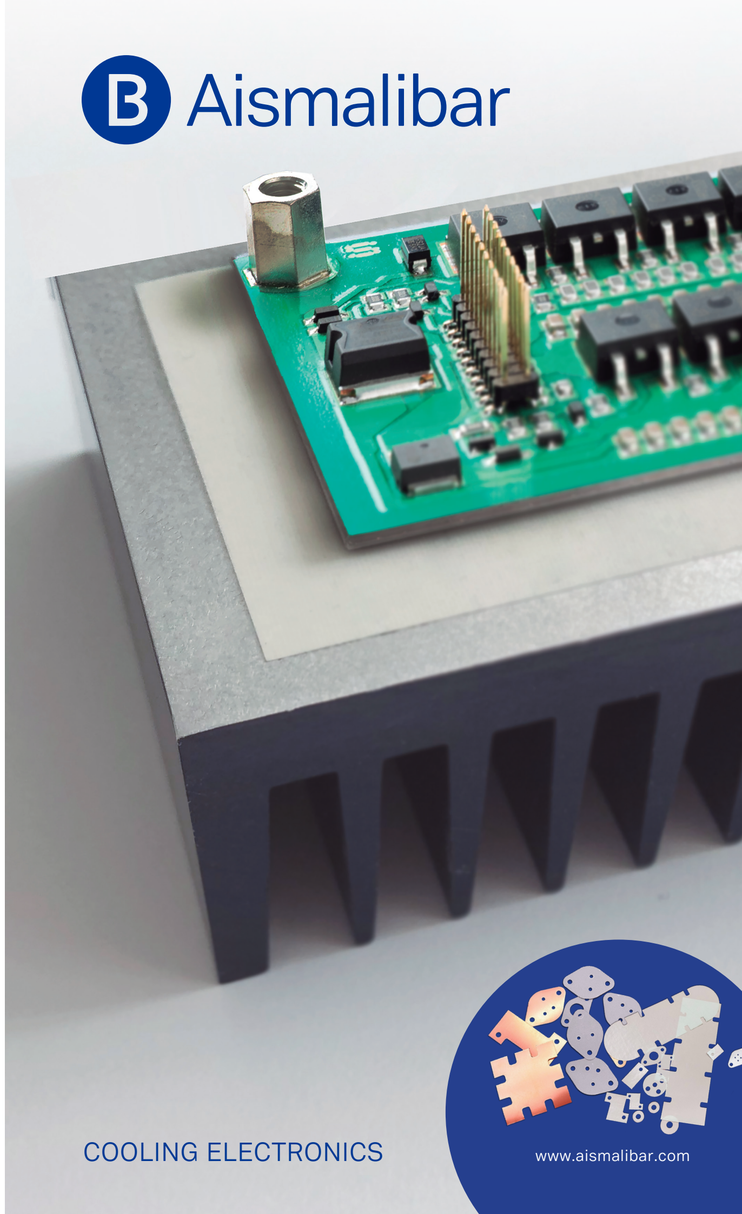
AISMALIBAR NORTHAMERICA
79 Miliken Blvd Unit 4
Toronto, On M1V 1V3.
Canada
T: +1 416 321 0770
jeff@aismalibar.com

AISMALIBAR TAIWAN
No 37, Alley 27, Ming Yu
13th Street 33049
Taoyuang. TAIWAN
T: + 886 3 316 8626
z.lin@Benmayor.com

AISMALIBAR GERMANY
T: + 49 17657834273
u.lemke@aismalibar.com

TIM: THERMAL INTERFACE MATERIAL

Aismalibar



COOLING ELECTRONICS

www.aismalibar.com

TIM: THERMAL INTERFACE MATERIAL

- Air voids reduction
- Low thermal resistance
- Silicon free no need thermal paste or grease
- TIM Surface tack free for easy assembly
- No need to peel a liner with Aismalibar Air Gap Filler technology

UL Approved QMTS2
File: E47820 IPC-4101

RoHS 3 / REACH
Last updated compliance directive

A clean, fast and efficient thermal interface material used to solve interface in between MPCB / Power Components and heat sinks, improving dielectric isolation and fast thermal transmission.

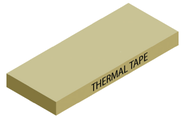
The new TIMS developed by Aismalibar eliminate air gaps from the interface, reducing thermal resistance. The reduction of airgaps will automatically be converted into a reduction of the junction temperature and copper lead frames.

Low Dielectric Strength TIM

THERMAL ADHESIVE TAPE

Adhesive film with two-sided adhesive combined with thermal transmission properties based on acrylic resin, PSA (pressure sensitive adhesive). Dual cure technology ensures greater adhesion over time after application. It is ideal to improve the wetting between rough surfaces allowing the conformation of the surface ensuring a 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.



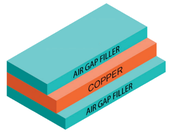
Thermal Tape µm (mils)
50 (2,0)

- **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 in rolls**

COPPERFILLER

COPPERFILLER is a TIM developed by Aismalibar designed to eliminate the need to apply thermal paste on the surfaces to be dissipated.

It is composed of three layers, the two external ones are responsible for filling the air cavities between the radiators and the components, eliminating the need for thermal paste and a central layer of 30 micron copper designed to distribute the temperature more efficient both in Z axis and in X, Y.



Cu µm (mils)
30 (1,2)
Air Gap Filler µm (mils)
30 (1,2)

- **No need to apply thermal paste**
- **Air voids reduction**
- **Efficient temperature distribution**

High Dielectric Strength TIM

BOND SHEET CURED

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.

Consisting of a glass fabric base, enriched with mineral fillers. Silicon free. Ideal for pick and place automation.

Bond Sheet Cured µm (mils)
70 (2,8) - 80 (3,1) - 100 (3,9)
Thickness tolerance
+ 10µm (+/- 0,4 mils)

BONDSHEET CURED Tg 120ºC - 2,2 W/mK					
	Units	No paste		Assembly with thermal paste	
Foil Thickness	µm	70	100	70	100
Thermal Resistance, Rth	K/W	0,315	0,450	0,127	0,163
Dielectric Strength (AC)	KV	>4	>6	>4	>6

BONDSHEET CURED HIGH Tg 180ºC - 3,2 W/mK			
	Units	No paste	Assembly with thermal paste
Foil Thickness	µm	80	80
Thermal Resistance, Rth	K/W	0,308	0,119
Dielectric Strength (AC)	KV	>4	>4

ISOL COPPER

ISOLCOPPER is a thin copper (35 micron) cladded with an ultrathin dielectric layer filled with high end mineral content.

This Aismalibar copper isolated treatment technology reduces the thermal resistance to very low values and achieving a dielectric strength up to 2 kV.
CTE expansion XY 17 ppm.

Low mounting pressure. Silicon free. No need of thermal grease.

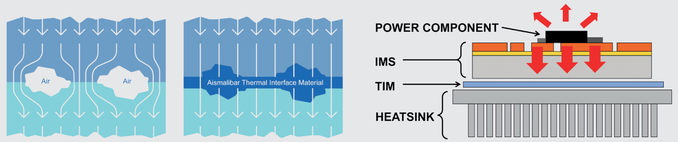
Isolcopper µm (mils)
80 (3,1)

ISOLCOPPER HIGH Tg 180ºC			
	Units	No paste	Assembly with thermal paste
Foil Thickness	µm	80	80
Thermal Resistance, Rth	K/W	0,167	0,097
Dielectric Strength (AC)	KV	>2	>2

Smart Combinations

BOND SHEET CURED and ISOLCOPER constructions include combinations with THERMAL TAPE and AIR GAP FILLER on one or two sides.

Depending on your electronic design and the features you are looking for in your PCB, as well as the type of components and the production process you are going to use, you can choose between the various constructions that we offer, where we combine our range of TIMs to adapt to your needs.

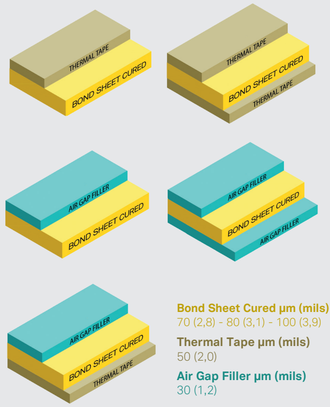


AIR GAP FILLER

Specific coating capable of adapting to the surfaces with which it comes into contact when applying a temperature of 40ºC. Upon reaching temperature, the surface softens, filling up the air cavities and conforming to rough surfaces. This conformation substantially reduces the thermal resistance caused by the air cavities between the thermal interface materials, the heat generating components and the dissipative radiators.
Aismalibar's Air Gap Filler Technology provides substantial advantages over other TIMS such as:

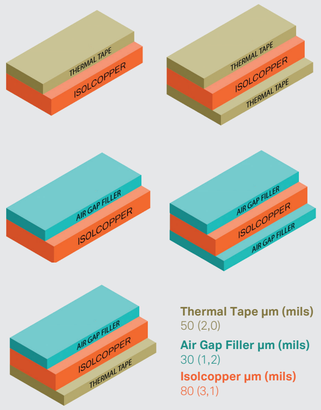
- **Silicone Free**
- **Completely dry and easy to handle**
- **Conforms only with temperature**
- **Does not need thermal pastes or greases as an interface**
- **Cleaning during assembly**
- **Replaceable / repositionable**

Bond Sheet Constructions



Bond Sheet Cured µm (mils)
70 (2,8) - 80 (3,1) - 100 (3,9)
Thermal Tape µm (mils)
50 (2,0)
Air Gap Filler µm (mils)
30 (1,2)

Isolcopper Constructions



Thermal Tape µm (mils)
50 (2,0)
Air Gap Filler µm (mils)
30 (1,2)
Isolcopper µm (mils)
80 (3,1)