

Thermal Solutions

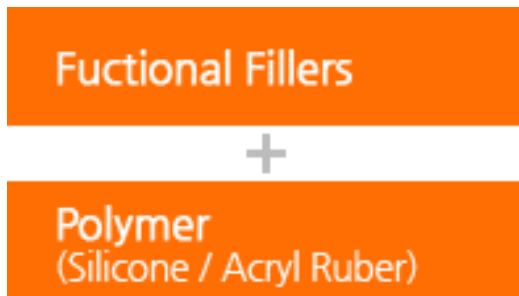
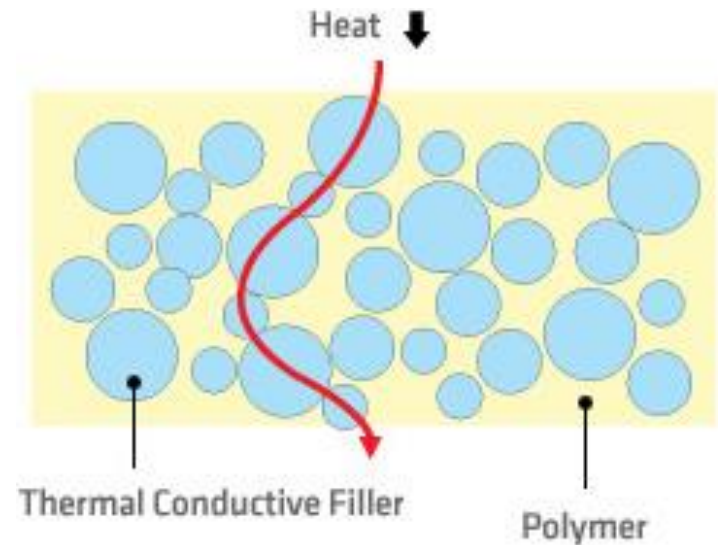


TIM(Thermal Interface Material)

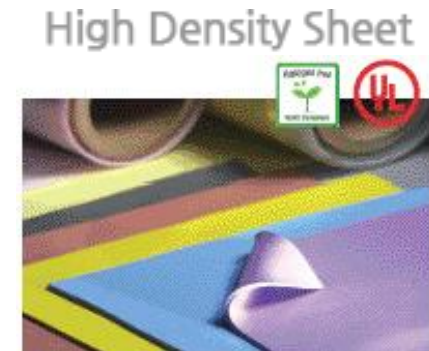
- TIM
 - High-thermal conduction functional materials to solve internal heating problems of electronic devices
 - Solving the problem by quickly transferring heat from a heat source to a heat sink or surrounding area

- Features

- High thermal conductivity
- High conformability
- Multi-Function
- High tensile strength
- Certification of UL94 V-0
- Eco-Friendly



Compounding Technique



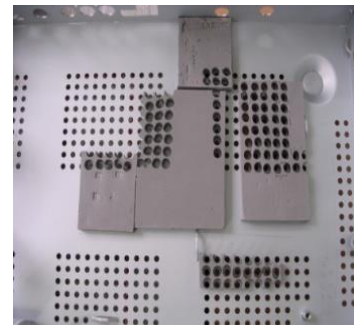
TIM – Sheet Type

Line up

Grade	Color	Standard Size (mm)	Thickness (mm)	Hardness (Asker C)	Thermal Conductivity (W/mK)	Tensile Strength (MPa)	Withstand Voltage (kV)	Volume Resistance (Ω -cm)	Flame Class (UL94)	Remark
TP-S15	Gray	300 x 300	0.5 ~ 6.0	25	1.5	> 0.2	> 5	> 10^{13}	V-0	Soft
TP-S25	Purple	300 x 300	0.5 ~ 7.0	25	2.5	> 0.2	> 5	> 10^{13}	V-0	Soft
TP-S60	Pink	300 x 300	1.0 ~ 3.0	35	6.0	> 0.2	> 5	> 10^{13}	V-0	Soft
TP-US15	Sky Blue	300 x 300	1.0 ~ 6.0	9	1.5	> 0.1	> 5	> 10^{13}	V-0	Ultra Soft
TP-H10	Sky Blue	300 x 300	0.5	65	1.0	> 1.0	> 5	> 10^{13}	V-0	Hard
TP-H30	Yellow	300 x 300	0.5	45	3.0	> 0.5	> 5	> 10^{13}	V-0	Hard Adhesive
TP-SS30D	Gray	300 x 300	1.0~4.0	20	3.0	> 0.2	> 5	> 10^{13}	V-0	Hard/Soft

Applications

- Telecommunication Devices (Router)
- Power Industries (SMPS)
- Flat Panel Displays (OLED, LCD)
- Set-top Boxes (SD/HD)
- Graphic Cards and Processors
- Memory Modules (DDR, S-RAM)
- Microprocessors



Dual Sheet Type (TIM + EMI)

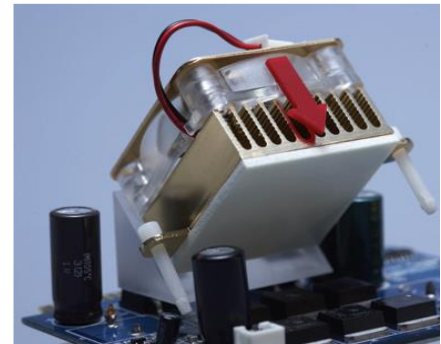
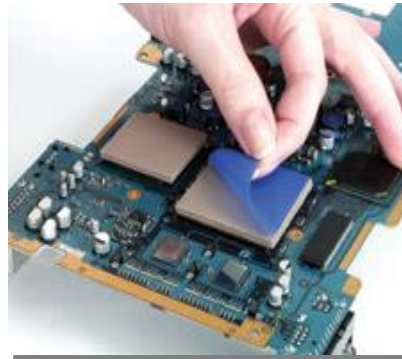
Line up

Grade	Color	Standard Size (mm)	Thickness (mm)	Hardness (Asker C)	Thermal Conductivity (W/mK)	Tensile Strength (MPa)	Withstand Voltage (kV)	Volume Resistance ($\Omega\cdot\text{cm}$)	*Power Loss [%]	Remark
TM-S15	Black	300 x 300	0.5 ~ 3.0	25	1.5	> 0.2	> 2.5	> 10^{10}	25	Dual

* Power Loss @ 1 GHz

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Liquid Molding Compound

Line up

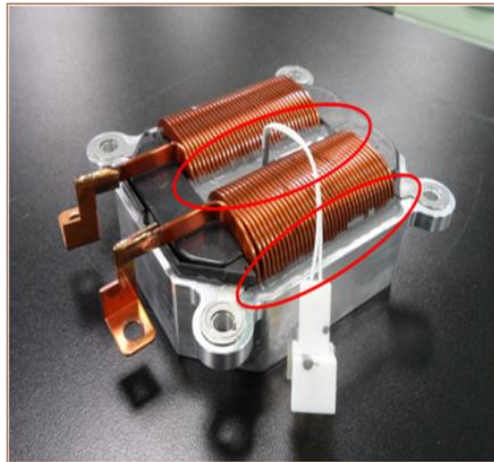
Grade	A/B Mixing Ratio (wt%)	Viscosity (cps)	Density (g/cm ³)	Hardness (Asker C)	Thermal Conductivity (W/mK)	Breakdown Voltage (kV)	Volume Resistivity (Ω·cm)	Flame Resistance (UL94)	Curing Condition (°C/min)
TC-M10	100 : 100	20,000	1.70	50	1.0	> 5	> 10 ¹³	V-0	120/30
TC-M20	100 : 100	20,000	2.60	50	2.0	> 5	> 10 ¹³	V-0	120/30
TC-M40	100 : 100	45,000	3.00	50	4.0	> 5	> 10 ¹³	V-0	80/40

Applications

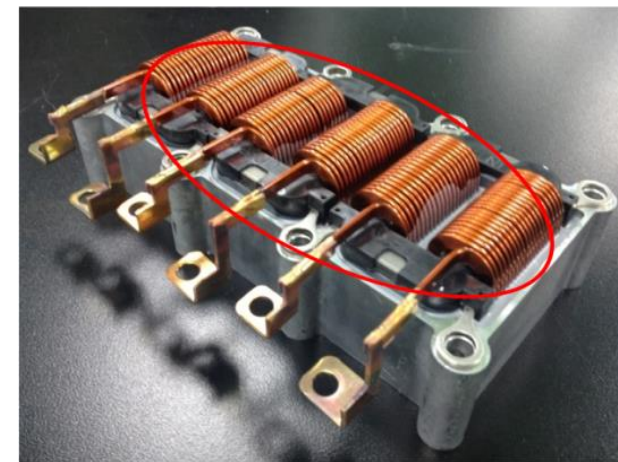
- Reactor for Electric & Hybrid Vehicle
- Reactor for Fuel Cell Module
- Reactor for Solar Cell Module



Hybrid Automobile



Electric Automobile



The End

Thank you