



<http://www.taica.co.jp/gel-english/>

αGEL[®]
Discover Softness.
Thermal Conductive GEL

Taica Corporation

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ISO9001





Excellent Cushioning and Vibration Damping Performance

Shock Absorption & Vibration Damping

Alpha GEL's (Alpha GEL) softness allows for deflection required for shock absorption and vibration damping, providing excellent cushioning and vibration damping performance.

Superior Durability

Durability

Alpha GEL is highly resistant to ozone, UV rays and chemicals, making it possible to use in a variety of locations. In addition, its performance is maintained even after repeated compression.

Stable Performance Even In a Harsh Environment

Stability

Alpha GEL's properties show little change in the -40°C (-40°F) to 200°C (392°F) range, providing stable performance.

Outstanding Platform for Additional Functions and Enhanced Performance

Function

On top of the unique combination of excellent features, *Alpha GEL* also works as a reliable foundation for additional functions and for enhancing performance without compromising the merits softness brings.

Extremely High Safety

Safety

Alpha GEL's composition makes it harmless to the human body and to the environment, causing no allergies when touched, and emitting no harmful gases when burned.



Taica's Know-how

Engineering & Know-How

You can count on us for enhanced cushioning, vibration damping, tender feel, and more.

Years of accumulated expertise and know-how, mastery of fine-tuning softness, designing and making optimum gel parts --- together all of these help cope with a variety of changing environments and needs of customers around the globe.

A raw egg dropped from a height of 18m(60')—equivalent to the sixth floor of a building—remains unbroken when caught by a sheet of *Alpha GEL* only 2 cm (0.8") thick.

Sheet-type Thermal Conductive GEL ΛGEL™ COH

◆ Lambda GEL/COH

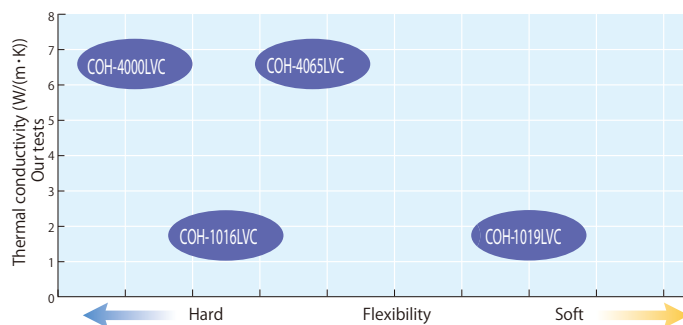


Features

- Offers outstanding thermal conductivity and excellent heat dissipation.
- Adhere to rough surfaces and push out all air gaps.
- Good electrical insulators and flame retardant.

General Properties

[Thermal Conductivity and Flexibility]



Item	Grade	COH-1016 LVC	COH-1019 LVC	COH-4000LVC	COH-4065LVC	Remark
		Few low molecular weight Siloxane	High damping	Few low molecular weight Siloxane	High thermal conductivity+High damping	
Thermal conductivity (W/(m·K))	Our tests	1.9	1.9	6.5	6.5	—
	Hot Wire Method ^(※1)	1.2	1.2	2.1	2.1	JIS R 2616
Hardness (Needle penetration·1/10mm)		60	90	45	65	JIS K 2207
Appearance		White	Blue	Gray	Reddish brown	—
Specific gravity		1.7	1.7	2.9	2.8	JIS K 6249
Tensile strength (MPa)		0.21	0.14	0.35	0.10	JIS K 6249
Volume resistivity (Ω·cm)		6.1×10 ¹³	3.1×10 ¹³	7.1×10 ¹³	4.4×10 ¹²	JIS K 6249
Dielectric breakdown voltage (kV/mm)		18.8	16.5	12.5	13.6	JIS K 6249
Elongation (%)		205	480	68	132	JIS K 6249
Compression set (%)		15	51	72	75	JIS K 6249
Dielectric constant	<50Hz>	4.8	4.6	5.6	6.8	JIS K 6249
	<1kHz>	4.3	4.2	5.0	6.5	JIS K 6249
	<1MHz>	4.0	3.9	5.5	6.0	JIS K 6249
Dielectric dissipation factor	<50Hz>	0.071	0.055	0.006	0.058	JIS K 6249
	<1kHz>	0.046	0.034	0.002	0.041	JIS K 6249
	<1MHz>	0.007	0.006	0.0004	0.011	JIS K 6249
RoHS controlled substances ^(※2)		Not detected	Not detected	Not detected	Not detected	—
Temperature range (°C)		-40~150	-40~150	-40~150	-40~150	—
One side non tacky type		○	○	○	○	



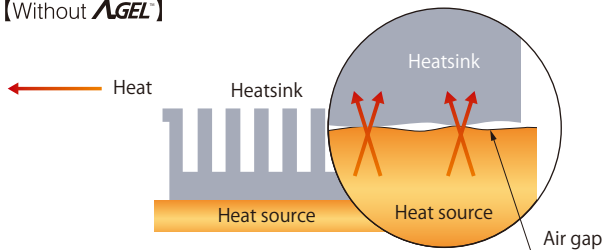
(※1) Hot Wire Method : Using the QTM-500 Quick Thermal Conductivity Meter, from Kyoto Electronics Manufacturing Co.,LTD.
 (※2) Temperature Range of Use: Range of measured stable thermal conductivity and hardness properties.

Please conduct appropriate reliability testing under actual usage conditions.

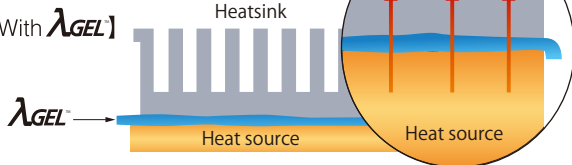
※Not Specified Values

The flow of heat

【Without λ GEL】



【With λ GEL】



λ GEL benefits

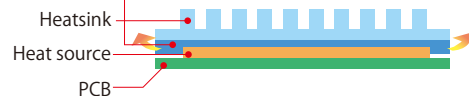
✗ Hard thermal conductive sheet stresses IC and PCB.

Hard thermal conductive sheet



● Softness of λ GEL™ releases stress and absorbs tolerance.

COH-1019LVC



Directions

- ◆ Slowly peel off one side of the protective film of λ GEL™.
- ◆ Carefully place λ GEL™ sheet on the heat source or heatsink without air gap.
- ◆ Peel off the remaining layer from λ GEL™ with no air gap in between the sheet and heat dissipating device or heat generating device.



Delivery Format

【Basic Specifications】

Sheet size	400×400mm
Sheet thickness	0.5、1.0、2.0、3.0mm

※ COH-4065LVC 1.0、2.0、3.0mm

Notes

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- It is highly recommended that users would not use the products shown in the brochure in medical applications, particularly for implantation use.
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- The silicone-gel contains low molecular siloxane, which could be volatile.

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Paste-type (Grease) Thermal Conductive GEL

◆ Lambda GEL/DP

Fill gaps around the heat source for improving heat dissipation. Eliminate running and vaporization problems. Easily spreads over heat generating devices.



Features

- Very soft paste-type (grease)GEL with thermal conducting properties.
- Cross-linked particles of **ΛGEL DP** eliminate running and vaporization problems seen with traditional grease and phase change materials.
- Good electrical insulators.

General Properties

Item		Grade	DP-100	DP-200	DP-300	Remark
Thermal conductivity (W/(m·K))	Our tests		6.5	4.8	4.8	—
	Hot Wire Method ^(※1)		2.0	1.6	1.6	JIS R 2616
Hardness (Cone penetration 1/10mm, not mixed)			51	55	60	JIS K 6249(1/4cone)
Appearance			Gray	Gray	White	—
Specific gravity			2.8	2.6	2.7	JIS K 6249
Volume resistivity (Ω·cm)			5.9×10^{13}	7.2×10^{14}	1.4×10^{14}	JIS K 6249
Dielectric breakdown voltage (kV/mm)			5.0	5.6	9.6	JIS K 6249
Dielectric constant	<50Hz>		8.9	7.6	4.4	JIS K 6249
	<1kHz>		7.8	6.7	4.2	JIS K 6249
	<1MHz>		7.0	6.6	4.0	JIS K 6249
Dielectric dissipation factor	<50Hz>		0.234	0.017	0.005	JIS K 6249
	<1kHz>		0.061	0.007	0.004	JIS K 6249
	<1MHz>		0.015	0.005	0.0004	JIS K 6249
Low molecular weight Siloxane level Σ D4-10 (ppm)	Solvent Extraction Method		Less than 700	Less than 900	Less than 300	—
	Head Space Method ^(※2)		Less than 1	Less than 3	Less than 1	—
RoHS controlled substances			Not detected	Not detected	Not detected	—
Temperature range (°C)			-40~200	-40~150	-40~120	—

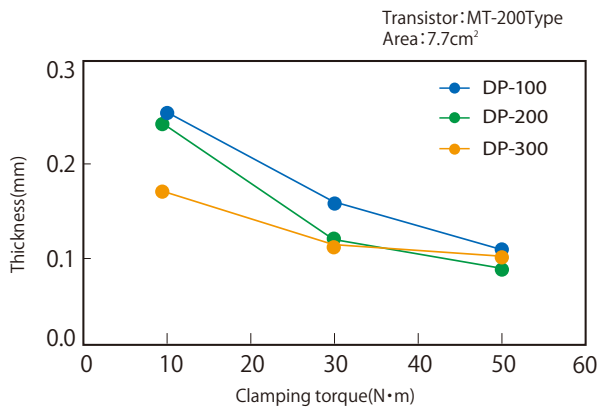


(※1) Hot Wire Method : Using the QTM-500 Quick Thermal Conductivity Meter, from Kyoto Electronics Manufacturing Co.,LTD.

(※2) Head Space Method : at 70°C

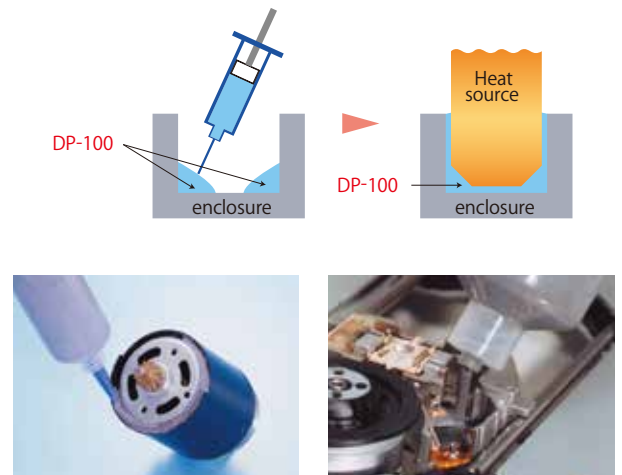
※Not Specified Values

【Clamping Torque Dependency】



【Filling Example】

DP-100



【Thermal Resistance】

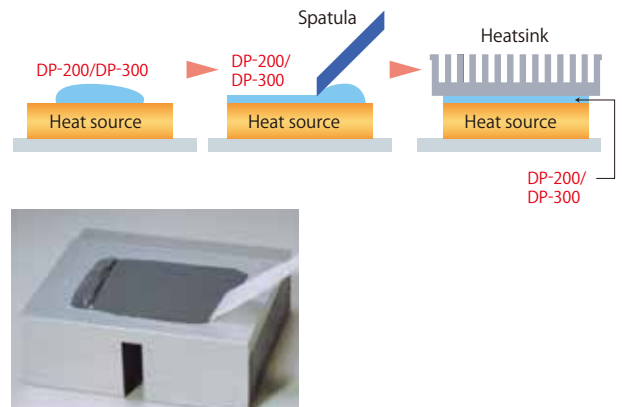
Transistor: MT-200 type
Heat input: 20W

Thickness (mm)	0.10	0.15	0.20	0.30
DP-100	—	0.13	0.15	0.18
DP-200	0.13	—	0.17	0.22
DP-300	0.09	—	0.17	0.25

(°C/W)

【Coating Example】

DP-200/DP-300



Delivery Format

【Basic Specifications】

DP-100/DP-200	Syringe 30mL
DP-300	Bottle 30mL

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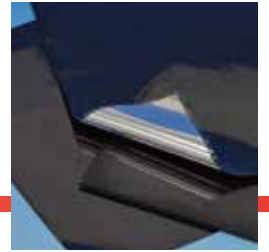
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Electromagnetic Noise Absorbent GEL

ΛGEL™ RE

◆ Lambda GEL/RE

Minimizing EM noise in all-in-one solution for electromagnetic noise, heat and shock.



Features

- Electromagnetic noise absorbent and thermal conductive characteristics.
- Adhere to rough surfaces with softness and show excellent heat dissipation and electromagnetic absorbing performance.
- Good electrical insulators and flame retardant.
- Usable over a wide range of temperature.

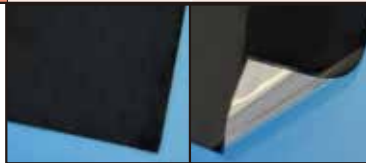
General Properties

Item		Grade	RE-100	RE-100H	Remark
Thermal conductivity (W/(m·K))	Our tests		2.0		—
	Hot Wire Method ^(※1)		1.0		JIS R 2616
Hardness (Needle penetration·1/10mm)			60		JIS K 2207
Appearance			Black		—
Specific gravity			2.9		JIS K 6249
Volume resistivity (Ω·cm)			2.0×10 ¹¹		JIS K 6249
Dielectric breakdown voltage (kV/mm)			4.5	10.0	JIS K 6249
Low molecular weight Siloxane level Σ D4-10 (ppm)	Solvent Extraction Method		Less than 300		—
	Head Space Method ^(※2)		Less than 1		—
Flame retardance			V-1 (0.5~2mmt) V-0 (3.0mmt)	—	UL94
RoHS controlled substances			Not detected		—
Temperature range (°C)			-40~150		—
Other Specification			—	w/Adhesive reflective layer	—

(※1) Hot Wire Method : Using the QTM-500 Quick Thermal Conductivity Meter, from Kyoto Electronics Manufacturing Co.,LTD.

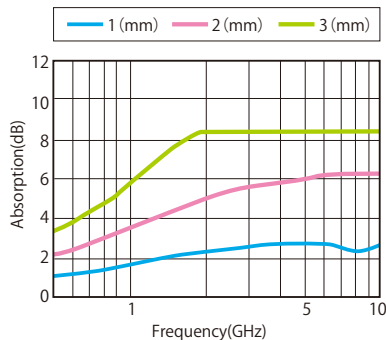
(※2) Head Space Method : at 70°C

※ Not Specified Values



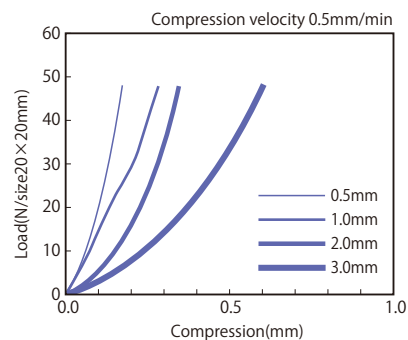
【Return Loss】

RE-100

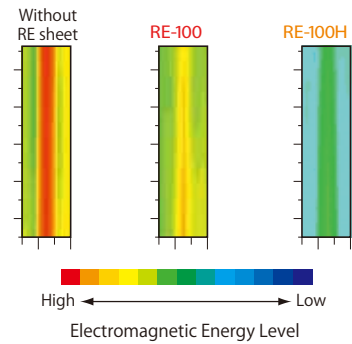
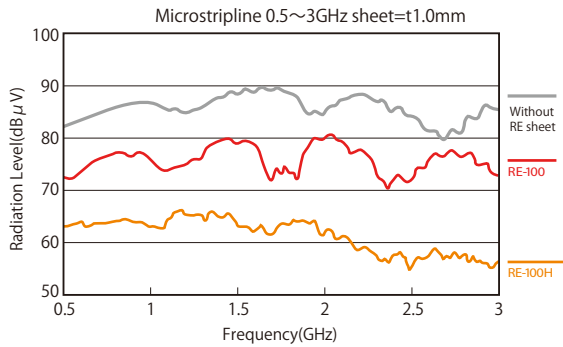


【Compression】

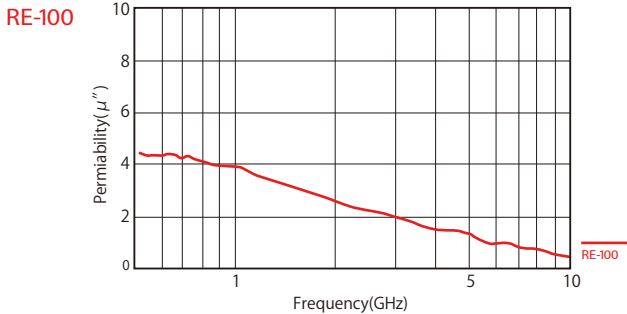
RE-100 RE-100H



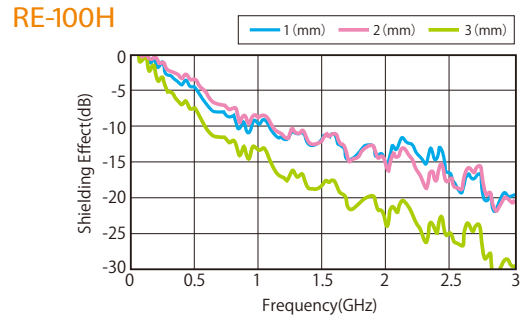
【Electromagnetic Noise Absorption】



【Electromagnetic Noise Absorption】



【Shielding Effect】



Directions

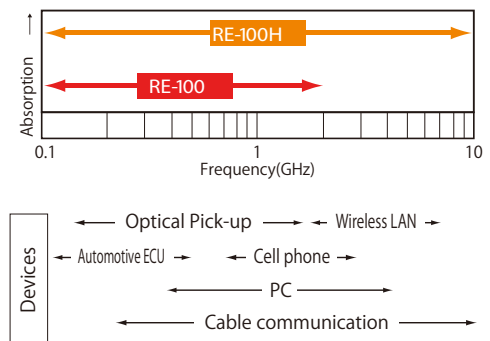
- ◆ RE-100 is protected by films on both sides.
 - Slowly peel off one side of the protective film of RE-100.
 - Carefully place RE-100 sheet on the heat source or heatsink without air gap.
 - Peel off the other film from RE-100. Place heat dissipating device or heat generating device on RE-100 without air gap.
- ◆ RE-100H has logo-film on one side and an adhesive layer on the other side.
 - Peel off the film on the adhesive side and fix RE-100H on the enclosure.
 - Peel off the logo-film, and place RE-100H on heat source or heatsink without air gap.

Delivery Format

【Basic Specifications】

Sheet thickness 0.5、1.0、2.0、3.0mm

【Frequency Range】



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