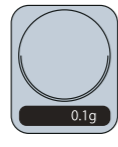


Notes of using HITOHADA[®] gel

What to prepare when making



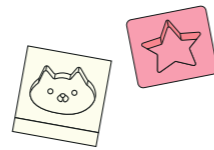
Calculator



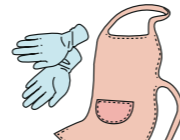
Digital scale that can measure to decimal places



Container and stick for stirring (disposable)



Mold



Recommend Gloves and apron

Notes in making

- HITOHADA gel will not removed once it adheres to clothing. We recommend to wear clothes that can get dirty or an apron. And if it adheres to the skin, it may cause rough skin. Please wear gloves when making.
- When coloring, please use our special pigments (sold separately). Using other company's pigments may cause poor curing.
- It may not harden if more than 1% of the main agent is added pigments.
- Undiluted resin reacts easily with moisture, and moisture from mold materials and humidity may cause poor curing.
- The product may melt, turn yellow, or discolor due to heat or UV rays, so please avoid direct sunlight and high temperatures when using and storing.
- There is a risk of peeling off the paint on the contact surface because of the gel has adhesiveness. Also, please be careful that this product contains a plasticizer and may bleed out.

About the environment during production

Since the HITOHADA gel undiluted solution may not harden well depending on the environment. Please manufacture under the following environment.
*Please be careful in the winter when the room temperature tends to do down, and the rainy season when the humidity is high.

Room temperature / liquid temperature	20°C or higher	
Room humidity	80% or less	
Accuracy of mixing amount of base resin and curing agent	1% or less by weight	
Pot life	Milky white	20 minutes at 23°C
	Transparent	40-60 minutes at 23°C
	Foaming	about 30 seconds

Storage method

Store in a dry, cool, and dark place after sealing, and use up within 1 week after opened.

The resin deteriorates even if it is unopened. The deteriorated resin may cause poor curing, so please use it up as soon as possible after purchase.

Disposal method

Mix the main agent and hardener and dispose of it as non-burnable garbage in a hardened state.

If you want to discard a small amount of either resin, soak it in a cloth and dispose of it as combustible waste. For larger quantities, please contact us.

About conformity of mold material

Metal molds, FRP molds, silicone molds, and resin molds are available. It is not possible to use molds made of materials that contain moisture, such as wooden molds or gypsum molds. Also, please use mold release agents for metal molds, FRP molds, and resin molds.

Mold material (Component / Product name)	Adaptability	Remarks
Polystyrene (PS) / Polyethylene (PE) / Polypropylene (PP)	○	No release agent required
Silicone (Part Number: RTV-2K#1406 / VM001 / OM-143, OM-142) *Please wait for about a week after manufacturing to remove the volatile components inside, and then wipe it off before use.	○	Recommend using a release agent
PET, Metal, Aluminum, FRP, Resin mold, Silicone (Product Name : NEW SUPER EX SILICONE)	△	Release agent required
Wooden molds, Gypsum molds, PVC	×	

*Silicon may not be compatible with some manufacturers. Other than the above, we recommend to use after checking.

*If you apply a release agent to the mold, dry it well before pouring HITOHADA gel.

*Example of mold release agent : Shin-Etsu Silicone Barrier Coat NO.7 (our part number Ba-7)

HITOHADA[®] gel Q&A about using



HITOHADA[®] gel Q&A about mold material



Urethane sheet with surface resistance value of $10^6\Omega$ and self-adhesiveness

Electrode gel

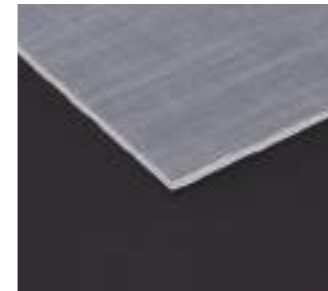
POINT

- 1 A urethane sheet that achieves both softness and reduced shape loss.
- 2 There are 2 types of adhesive strength, and the material that can be used for EEG measurement and the pad part of EMS.
- 3 It is a semi-conductive material with a surface resistance value of $10^6\Omega$.



Electrode gel weak adhesive type

Image for use

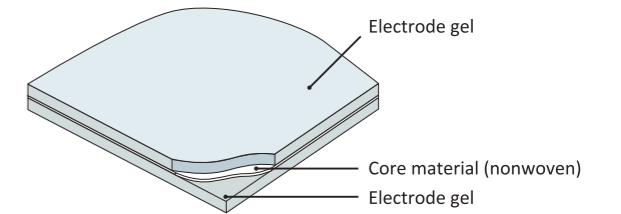


*Image is for illustration purposes.

It is a material with higher conductivity than Semiconductive gel sheet (P.31).

A material that can be used to EEG measurement.

Structure (There are protective films on both sides of the product.)



Specifications / Characteristics

Surface resistance value $10^6\Omega$



Weak adhesive type

The material that has a high affinity for human skin.

Part Number	Size (mm)	Thickness (mm)
ERG-15	500×450	1.5

Electrode gel strong adhesive type

Image for use

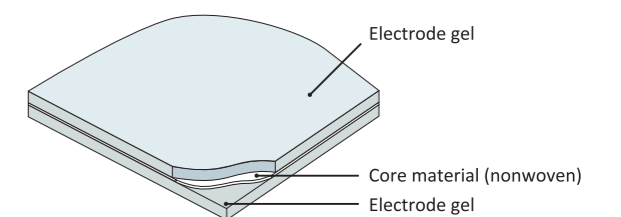


*Image is for illustration purposes.

It is a material with higher conductivity than Semiconductive gel sheet (P.31).

For the pad part of EMS.

Structure (There are protective films on both sides of the product.)



Specifications / Characteristics

Surface resistance value $10^6\Omega$



Strong adhesive type

The material has strong adhesive and is easy to stick to the skin.

Part Number	Size (mm)	Thickness (mm)
ERS-15	500×450	1.5



Urethane gel phantom



- 1 A plate-like phantom made of urethane gel material.
- 2 It can be used for testing diagnostic equipment because the speed of ultrasonic wave propagation is extremely similar to the fat layer of human body.

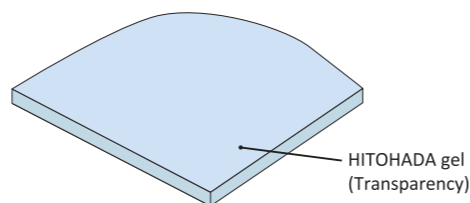
Image for use



High transparent and ultra-soft plate-like phantom.

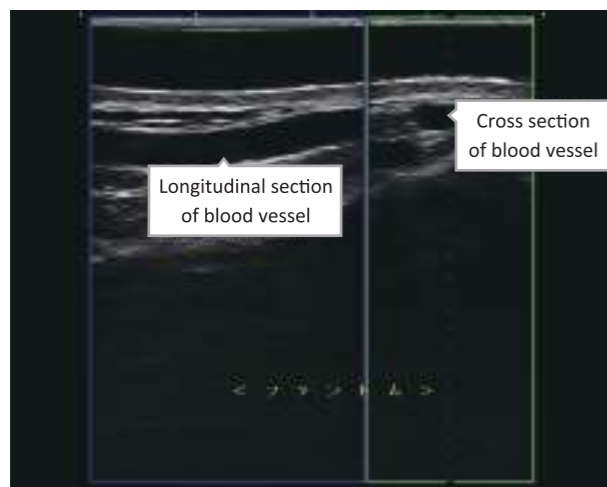
It is possible to train different fat layers by changing the thickness.

Structure (There are protective films on both sides of the product.)



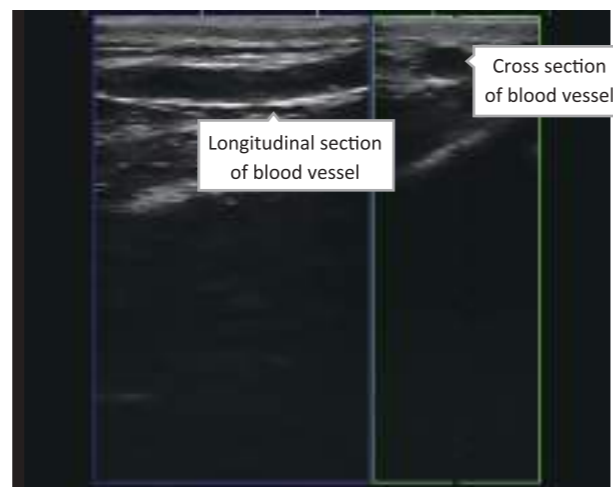
Ultrasound diagnostic echo photography

With Urethane gel phantom



This is an image when diagnosed through a gel with using an ultrasonic diagnostic imaging equipment. It is possible to see the longitudinal/cross-section of blood vessel more clearly by using the Urethane gel phantom.

No Urethane gel phantom



Urethane gel phantom

A transparent and soft Urethane gel phantom.



Part Number	Size (mm)	Thickness (mm)	Hardness
IP-05	250×250	5.0	Asker C5
IP-10		10.0	
IP-20		20.0	
IP-30		30.0	



We also hear to manufacture the original shapes your choice, please feel free to contact us.



Self check tool for breast cancer



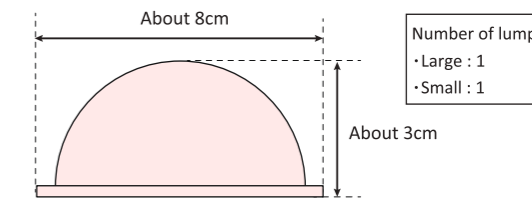
- 1 This is a palpation model that utilizes the softness of urethane gel.
- 2 There are "lumps" of different shapes and sizes inside, useful for self-checking for breast cancer.
- 3 It can be used as items to provide additional explanations and raise awareness at schools, facilities, clinics, etc.

Image for use



It is possible to feel the lump by touch. For self-check practice.

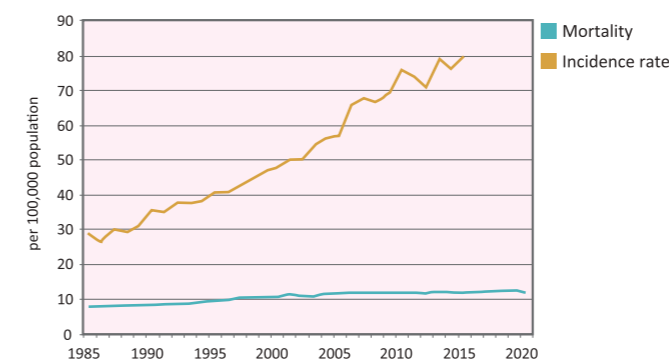
Structure



It is a simple type that wraps the parts imitated lumps with soft gel and film.

Breast cancer and early detection

Breast cancer mortality and incidence rate (Annual change)



The number of Japanese people who develop breast cancer is on the rise, and it is currently said to be 1 in 14 people. Breast cancer can be treated in more than 90% of cases if there is no metastasis and early detection. In addition, about half of breast cancer patients find something wrong with their breasts by themselves. Early detection saves lives and protects breasts from breast cancer.

Source : Center for Cancer Control and Information Services, National Cancer Center, Japan

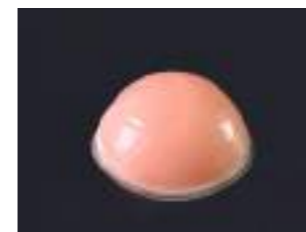


Notes

- *Shikori checker is just a sample. When checking the actual breast, we recommend that you use it as a reference, and if you feel something wrong, please seek a medical attention.
- *If you find any lumps or abnormalities on your own, please consult "mammary gland surgery" or "surgery" with a mammary gland specialist there. (Please note that the examination is not an obstetrics and gynecology department.) Even if there is an abnormality in the self-check, it does not necessarily mean that it is breast cancer. As it may be a benign disease such as mastopathy or fibroadenoma, please do not judge yourself and seek medical attention promptly.

Shikori checker

A soft palpation model that supports self-checking for breast cancer.



Part Number	Size (mm)
S-CHECK	approx. Φ80

*With case.



We also hear to manufacture the original shapes your choice, please feel free to contact us.



Physical Properties

Item	Gel tack	Semiconductive gel			GEL-BASE *gel part				Pit cushion	Soft cushion	Flame retardant non-slip		
		15	30	50	3	5	7	S9					
Specific gravity	1.04	1.13	1.13	1.13	1.13	1.14	1.14	1.11	1.13	1.13	1.09		
Hardness	Shore A	4	0	8	26	8	26	52	51	70	47	50	
	Asker C	23	15	30	50	30	50	70	72	80	67	70	
Tensile strength	Strength	N/mm ²	0.66	0.36	0.78	1.62	0.81	1.42	2.25	1.32	21.78	8.31	9.89
	100% elongation stress	N/mm ²	0.17	0.05	0.24	0.79	0.31	0.80	2.10	×	5.01	1.08	4.26
	200% elongation stress	N/mm ²	0.27	0.07	0.51	1.54	0.63	×	×	×	13.55	1.89	×
	300% elongation stress	N/mm ²	0.39	0.10	×	×	×	×	×	×	×	3.05	×
Tensile elongation		%	480	660	270	210	230	170	110	68	260	570	180
Tear strength		N/mm	4.8	1.8	3.7	5.6	4.1	7.6	9.7	7.3	37.3	16.8	28.5
Compressive Strength	10% strain stress	N/mm ²	0.04	0.02	0.05	0.15	0.08	0.18	0.47	0.40	0.62	0.29	0.38
	20% strain stress	N/mm ²	0.09	0.05	0.14	0.36	0.18	0.40	1.03	0.92	×	0.59	0.89
	30% strain stress	N/mm ²	0.16	0.09	0.25	0.64	0.33	0.67	×	×	×	1.00	1.53
Compressive elasticity modulus		N/mm ²	0.48	0.27	0.82	1.94	0.94	2.02	5.38	4.90	8.37	2.87	4.77
Water absorption rate	23°C 24hrs	%	9.5	4.0	1.6	1.6	2.2	1.5	1.0	1.2	2.5	2.1	1.9
Water resistance	Tensile strength	N/mm ²	0.69	0.39	0.73	1.64	0.73	1.06	2.02	1.40	8.07	5.77	9.89
	100% elongation stress	N/mm ²	0.16	0.09	0.28	0.94	0.25	0.69	×	×	6.30	1.13	4.10
	Elongation	%	510	310	240	170	270	160	77	63	120	390	190
Oil resistance	Tensile strength	N/mm ²	0.64	0.78	0.78	1.37	0.71	1.27	2.15	1.45	23.75	9.16	10.52
	100% elongation stress	N/mm ²	0.17	0.25	0.20	0.66	0.33	1.00	×	×	4.61	0.92	4.18
	Elongation	%	480	260	330	200	200	140	84	64	270	630	190
Acid resistance	Tensile strength	N/mm ²	0.88	1.34	1.41	1.49	0.92	1.38	2.29	1.76	9.48	6.60	10.02
	100% elongation stress	N/mm ²	0.14	0.26	0.22	0.61	0.31	1.01	×	1.65	5.10	0.94	4.09
	Elongation	%	700	350	430	210	250	140	89	110	160	530	190
Alkali resistance	Tensile strength	N/mm ²	1.14	0.82	0.80	1.23	0.85	1.37	2.07	1.31	12.86	9.86	7.38
	100% elongation stress	N/mm ²	0.16	0.22	0.17	0.63	0.33	1.00	×	×	4.77	0.93	4.21
	Elongation	%	800	300	330	190	230	150	83	67	190	600	150
Heat aging	Tensile strength	N/mm ²	0.71	0.37	0.89	1.31	0.78	1.10	2.18	1.40	28.99	4.91	11.16
	100% elongation stress	N/mm ²	0.13	0.06	0.27	0.76	0.33	0.90	×	×	5.17	0.87	4.16
	Elongation	%	670	390	300	170	230	120	97	72	270	540	200
Compression set	70°C, 24h	%	27	32	31	23	23	17	11	2	0	5	22
	72h	%	43	56	47	41	49	39	24	3	14	13	33
Limit heat resistance temperature	°C		80	80	80	80	80	80	80	80	80	80	80
Adhesive strength 180° Peel	N/25mm		3.38	2.25	0.95	0.55	0.45	0.20	0.20	×	0.44	1.33	0.01 urethane side
	Holding force	sec	0mm	68	336	283	160	1519	0mm	1	0mm	0mm	0
	Ball tack	No.	17	22	13	11	4	2	Under No.2	Under No.2	Under No.2	Under No.2	Under No.2
Visible light transmission	%		92.7	86.9	83.2	80.5	-	-	-	62.8	92.3	95.0	-
Proper load	kgf/cm ²		2.44	1.30	2.15	6.69	-	-	-	-	22.45	11.84	-

Note 1) These measured values are reference values, not guaranteed values.

Note 2) These contents are subject to change without notice due to performance improvements, specification changes, etc.

Note 3) The holding force is displayed that the time (sec) for the material to completely peel off from the test plate, or the distance (mm) that it deviated in 24 hours.

Note 4) Regarding marks in the physical property table : ×: not detected - : not measured

Clear tack	Hyper gel				HITOHADA gel *hardened material					Electrode gel		Remarks (JIS No.)
	15	30	50	70	0	7	15	Clear 0	Clear 7	Weak adhesive	Strong adhesive	
1.08	1.08	1.08	1.09	1.11	1.03	1.03	1.03	1.00	1.00	1.13	1.07	K6911
-	0	8	26	47	0	0	1	0	0	0	0	K7312
14	15	30	50	65	0	7	15	0	7	4	0	
0.66	1.33	1.70	1.45	2.04	0.34	0.58	1.58	0.02	0.04	0.35	0.36	K7312
-	0.05	0.22	0.62	1.24	0.01	0.03	0.11	0.01	0.03	×	×	
-	0.08	0.35	0.98	1.99	0.03	0.05	0.35	×	×	×	×	
-	0.11	0.51	1.38	×	0.05	0.09	0.72	×	×	×	×	
480	1300	760	310	200	760	550	450	160	120	18	13	K7312
0.3	2.8	8.5	10.7	17.6	0.2	2.7	3.2	0.2	0.6	1.96	1.88	K7312
-	0.01	0.04	0.12	0.29	0.005	0.009	0.019	0.002	0.006	-	-	K7312
-	0.03	0.09	0.28	0.64	0.011	0.022	0.055	0.006	0.014	-	-	
-	0.05	0.17	0.50	1.07	0.021	0.040	0.101	0.009	0.027	-	-	
-	0.15	0.50	1.51	3.29	0.06	0.11	0.33	0.03	0.08	-	-	K7312 At 10-15% strain
-	1.4	0.9	0.7	0.5	7.2	6.0	4.8	7.0	6.5	50.2	32.2	K7209 23°C, 24h
-	1.07	1.62	1.81	2.03	0.59	0.51	1.14	0.10	0.14	0.54	0.53	K7312 Purified water
-	0.05	0.22	0.88	1.37	0.02	0.05	0.15	0.01	0.05	×	×	23°C, 48h
-	1300	720	250	180	680	370	330	600	280	20	15	
-	2.19 or more (no breaking)	2.83	2.29	2.40	0.82	1.09	2.46	0.06	0.09	0.47	0.46	K7312 No.1 Oil
-	0.06	0.20	0.58	1.33	0.02	0.05	0.16	0.01	0.04	×	×	23°C, 48h
-	1400 or more (no breaking)	1000	480	230	680	580	520	290	210	24	15	
-	1.91	3.15	2.87	4.84	0.22	0.28	0.81	0.02	0.03	0.30	0.44	K7312 10% HCl
-	0.04	0.16	0.46	1.24	0.03	0.04	0.19	0.01	×	×	×	23°C, 48h
-	1300	1200	620	410	360	410	260	110	73	11	13	
-	0.56	2.51	3.00	3.25	0.52	0.53	1.54	0.03	0.04	0.47	0.52	K7312 10% NaOH
-	0.05	0.19	0.57	1.28	0.02	0.05	0.15	0.01	0.02	×	×	23°C, 48h
-	970	1200	580	320	570	390	410	250	160	30	18	
-	0.72	1.68	1.74	2.74	0.30	0.68	1.31	0.03	0.04	0.34	0.45	K7312 80°C, 48h
-	0.06	0.30	0.78	1.45	0.01	0.02	0.08	0.01	0.03	×	×	
-	940	700	290	240	660	560	490	190	120	27	12	
-	72	45	49	35	28	23	15	6	0	-	-	K7312
-	88	84	82	66	63	39	37	22	5	-	-	
-	80	80	80	80	60	60	60	60	60	30	30	
0.75	2.32	0.65	0.47	0.18	0.15	0.07	0.06	0.10	0.12	0.20	1.15	Z0237 SUS304
231	328	0mm	0mm	0mm	180	43	17	2	3	6	21	Z0237 1kg, 24h, SUS304, □25mm
8	15	4	3	Under No.2	10	6	2	8	7	3	9	Z0237 30°
89.5	95.8	93.4	91.4	89.6	0.1	0.1	0.1	92.9	88.3	-	-	1mmt
-	0.53	2.29	7.31	17.41	0.30	0.55	1.51	0.08	0.25	-	-	When a 2mm thick sheet is compressed by 15% (Φ50mm)

Physical Properties

Item	LIFT MAT	LIFT MAT for rough surfaces	STEP MAT	STEP MAT semi conductive	Hand/Body/Carpet roller *gel part	Dust catcher	Body roller semi conductive	Floor roller	Tip remover	Tip remover semi conductive	Remarks (JIS No.)
Specific gravity	1.13	1.17	1.08	1.08	1.03	1.05	1.05	1.05	1.05	1.05	K6911
Hardness	Shore A	51	51	12	11	1	11	12	7	7	K7312
	Asker C	70	70	33	33	15	33	33	30	30	
Tensile strength	Strength N/mm ²	20.8	34.9	8.40	14.4	1.58	2.97	2.07	0.40	1.41	K7312
	100% elongation stress N/mm ²	×	×	×	×	0.11	0.37	0.43	0.17	0.20	
	200% elongation stress N/mm ²	×	×	×	×	0.35	0.95	1.13	0.30	0.35	
	300% elongation stress N/mm ²	×	×	×	×	0.72	1.84	×	0.44	0.51	
Tensile elongation	%	60	51	96	70	450	390	280	310	690	K7312
Tear strength	N/mm	96.1	71.8	23.5	22.7	3.2	8.2	6.8	3.0	6.9	K7312
Compressive Strength	10% strain stress N/mm ²	0.04	0.04	0.07	0.06	0.02	0.06	0.07	-	-	K7312
	20% strain stress N/mm ²	0.08	0.08	0.15	0.15	0.05	0.15	0.15	-	-	
	30% strain stress N/mm ²	1.22	1.22	0.26	0.26	0.10	0.26	0.26	-	-	
Compressive elasticity modulus	N/mm ²	6.78	6.78	0.79	0.78	0.33	0.78	0.72	-	-	K7312 At 10-15% strain
Water resistance		No abnormality	No abnormality	No abnormality	No abnormality	No abnormality	No abnormality	-	-	-	K7312
Water absorption rate	23°C, 24h %	3.6	1.3	3.9	-	4.8	7.8	10.5	6.6	6.4	K7209
	40°C, 24h %	3.0	1.6	3.1	-	5.6	7.0	-	3.2	5.5	
Oil resistance	40°C, 24h %	No abnormality	-0.1	No abnormality	-	-7.3	-1.6	-	-	-	K7312 No.1 Oil
Acid resistance	24h %	21	0.9	22	-	No abnormality	28.9	-	16	16	K7312 10% HCl
Alkali resistance	24h %	2	1.1	1	-	No abnormality	3.8	-	4	3	K7312 10% NaOH
Environmental resistance	80°C, 80%, 24h	No abnormality	-	No abnormality	-	No abnormality	-	-	-	-	
Heat aging	Tensile strength N/mm ²	17.7	35.0	8.30	24.2	1.31	3.04	2.03	0.40	2.01	K7312 80°C, 48h
	100% elongation stress N/mm ²	×	×	×	×	0.08	0.44	0.46	0.15	0.13	
	Elongation %	46	45	47	84	490	350	270	280	1200	
Compression set	70°C, 22h %	82	82	19	23	15	23	19	-	-	K7312
	100°C, 70h %	100	100	76	81	37	81	-	68	83	
Limit heat resistance temperature	°C	60	60	60	60	60	60	60	80	80	
Adhesive strength	180° Peel N/25mm	0.15	0.15	0.05	0.10	0.06	0.10	0.12	0.54	3.10	Z0237 SUS304
	Holding force sec	0mm	0mm	5	11	17	11	20	-	-	Z02371kg, 24h, SUS304, □25mm
	Ball tack No.	Under No.2	Under No.2	Under No.2	Under No.2	2	Under No.2	2	-	-	Z0237 30°
Visible light transmission	%	0.1	0	0.1	0	0.1	0	0	-	-	1mmt

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YTK CO.,LTD.
[Http://www.ytk-group.co.jp](http://www.ytk-group.co.jp)