



Adhesives and Bonding Tools



To obtain good measurement results, the strain gage must be bonded completely to the measuring object. Thus, it is important to select a suitable adhesive for the materials of measuring object and gage base and for measuring requirements.

Export controlled product:

[Air transport prohibited]: Product which falls under the Aviation Law, and for which air transport is prohibited.

Model	Type	Features	Curing Requirements	Operating Temperature Range (°C)	Ingredient	Capacity	Major Applicable Materials	Major Applicable Gages
CC-33A	Instantaneous adhesive cured at normal temperatures	<ul style="list-style-type: none"> Suitable for bonding general-purpose gages, such as KFG and KFR, which are used for general stress measurement at normal temperatures of 20 to 80°C. Quick curing time and stable bonding of various materials in a wide range of temperature and humidity ranges. Quick curing ensures smooth bonding works. Enables measurement in approximately 1 hour from bonding. 	Apply finger pressure (100 to 300 kPa) for 15 to 60 seconds. Then, leave the gage as it is for 1 hour. The finger pressure application time differs depending on temperature and humidity conditions. The lower the temperature and humidity, the longer the finger pressure application time required.	-196 to 120	1 type of cyanoacrylate liquid	2g×1 or 2g×5	<ul style="list-style-type: none"> Metals (steel, stainless steel, copper, aluminum alloys A1050/A2024, etc.) Plastics (acrylate, vinyl chloride, nylon, etc.) Composite materials (CFRP, GFRP, printed board, etc.) Rubber 	KFG, KFGT, KFR, KFW, KFRP, KFRL, KSP, KSPH, KSP, KFL, KFN, KFS, KFF, KCH, KV,
CC-35	Instantaneous adhesive cured at normal temperatures	<ul style="list-style-type: none"> Suitable for bonding a gage to porous materials such as concrete for general stress measurement at normal temperatures of 20 to 80°C. High viscosity makes it suitable for bonding to porous materials such as lumber and concrete. 	Apply finger pressure (100 to 300 kPa) for 30 to 60 seconds. Then, leave the gage as it is for 1 hour or more. The finger pressure application time differs depending on temperature and humidity conditions. The lower the temperature and humidity, the longer the finger pressure application time required.	-30 to 120	1 type of cyanoacrylate liquid	2g×1 or 2g×5	<ul style="list-style-type: none"> Concrete Mortar Lumber 	KFG, KFGT, KFR, KC, KFRP, KFP
CC-36	Instantaneous adhesive cured at normal temperatures	<ul style="list-style-type: none"> Suitable for bonding a high-elongation gage such as KFEM and KFEL at normal temperatures of 20 to 80°C. Suitable for bonding to hard-to-bond materials such as aluminum alloy (A7075) and magnesium alloy. High peeling resistance, high impact resistance and less aging deterioration of bonding strength Strong bonding power to hard-to-bond materials. Curing time is longer than CC-33A. 	Apply finger pressure (100 to 300 kPa) for 30 to 60 seconds. Then, leave the gage as it is for 1 hour or more. The finger pressure application time differs depending on temperature and humidity conditions. The lower the temperature and humidity, the longer the finger pressure application time required.	-30 to 100	1 type of cyanoacrylate liquid	2g×1 or 2g×5	<ul style="list-style-type: none"> Metals (steel, stainless steel, copper, aluminum alloys A1050/A2024/A7075 magnesium alloy, etc.) Plastics (acrylate, vinyl chloride, nylon, polypropylene, etc.) Composite materials (CFRP, GFRP, printed board, etc.) Concrete Mortar Lumber Rubber 	KFEM, KFEL, KFG, KFGT, KFR, KFW, KFW5, KFRP, KFRL, KSP, KSN (excl. E5), KSPH, KSP, KFF, KV
EP-270	Cured at room temperature	<ul style="list-style-type: none"> Suitable for bonding gages for strain measurement at very low temperatures. 	Apply pressure (50±20 kPa) for 24 hours at approx. 25°C	-269 to 30	2 types of liquid mixed, room temperature curing adhesive	50 g Main agent: 25 g Curing agent: 25 g	<ul style="list-style-type: none"> Metals (stainless steel, aluminum alloy, etc.) 	KFL
EP-340	Cured at normal temperatures or by heating	<ul style="list-style-type: none"> Suitable for bonding gages for strain measurement at middle temperatures. 	Apply pressure (30 to 50 kPa) for 24 hours at approx. 25°C or for 2 hours at 80°C. Pressing is possible with tape.	-55 to 150	2 types of liquid mixed, room temperature curing adhesive	30 g Main agent: 6 g x 4 Curing agent: 1.5 g x 4	<ul style="list-style-type: none"> Metals (stainless steel, aluminum alloy, etc.) 	KFG, KFR
EP-34B	Cured at normal temperatures or by heating	<ul style="list-style-type: none"> Suitable for strain measurement at middle temperatures and for bonding gages for transducers. 	Apply pressure (30 to 50 kPa) for 24 hours at approx. 25°C or for 2 hours at 80°C. Pressing is possible with tape.	-55 to 200	2 types of epoxy liquid mixed	30 g Main agent: 5.6 g x 4 Curing agent: 2.1 g x 4	<ul style="list-style-type: none"> Metals (steel, stainless steel, copper, aluminum alloy, etc.) Plastics (acrylate, PVC, etc.) Composite materials (CFRP, GFRP, printed board, etc.) 	KFG, KFGT, KFR, KFRP, KFP, KFH, KFF
EP-180	Cured at normal temperatures or by heating	<ul style="list-style-type: none"> Low viscosity makes it suitable for bonding gages (KFG-C20) embeddable in bolts. 	Apply pressure (50 to 100 kPa) for 48 hours at approx. 25°C 12 hours at 40°C 3 hours at 80°C If used in bolt gages, then refer to the bolt gage instruction manual	-50 to 100	2 types of epoxy liquid mixed	30g Main agent: 18g Curing agent: 12g	<ul style="list-style-type: none"> Metals (steel, stainless steel, copper, aluminum alloy, etc.) Plastics (acrylate, PVC, etc.) 	KFG (C20), KFW, KFW5, KFF
PC-600	Cured by heating	<ul style="list-style-type: none"> Suitable for strain measurement at low, middle and high temperatures and for bonding gages for transducers. 	Apply Pressure (150 to 300kPa) for 1 hour at 80°C, 2 hours at 130°C and then, 2 hours at 150°C	-269 to 250	1 heating type of phenol liquid	100g	<ul style="list-style-type: none"> Metals (steel, stainless steel, copper, aluminum alloy, etc.) 	KFG, KFR, KFH, KFL, KFN, KFS
PI-32	Cured by heating	<ul style="list-style-type: none"> Suitable for bonding gages for strain measurement at high temperature. 	Apply pressure (200 to 500 kPa) for 1 hour at 100°C, 2 hours at 200°C and then, heat for 2 hours at the operating temperature with the pressure removed. If it is difficult to heat to 200°C, 2 hours at 200°C may be changed to "5 hours at 160°C" with all other conditions followed.	-296 to 350	1 heating type of polyimide liquid	20g	<ul style="list-style-type: none"> Metals (steel, stainless steel, copper, aluminum alloy, etc.) 	KFU, KFH

Note: The stated operating temperature range is for the adhesive only, and may differ depending on combinations with gages. When using, read the attached instruction manual carefully.



Coating Agents



Coating Agents

Coating agents are applied to gages and gage terminals to prevent gages from adsorbing moisture in outdoor or long-term measurement.

- ◎ : Excellent
- : Rather excellent
- △ : Rather inferior
- × : Inferior

Model	C-1B	C-4	C-5	AK-22	VMTAP	ARALDITE-T,C	HAMATITE-Y	KE-4898W
Type	Hot-melt type	Hot-melt type	Rubber solvent type	Special clay	Press-fitting rubber type	2-liquid type (1:1)	Rubber solvent type	Silicon solvent type
Operating Temp. Range	-30 to 40°C	-50 to 60°C	-269 to 60°C	-196 to 170°C	-30 to 80°C	-50 to 100°C	-20 to 70°C	-50 to 200°C
Curing Requirements	Heat-melted & cured at room temp.	Heat-melted & cured at room temp.	Melted & dried at room temp. 12 hrs.	Press-fitted	Press-fitted	24 hours at room temp.	Melted & dried at room temp. 12 hrs.	Melted & dried at room temp. 12 hrs.
Moisture/Water-proofness	◎	◎	◎	◎	○	△	○	△
Mechanical Protection	△	△	△	△	△	◎	△	△
Oil Resistance	△	△	△	△	△	○	△	△
Alcohol Resistance	○	○	○	○	○	○	○	○
Toluene Resistance	×	×	×	×	×	○	×	×
Alkalescent Resistance	○	○	○	○	○	○	△	△
Weak-acid Resistance	○	○	○	○	○	○	△	△
Content	500g	500g	100g	500g	38mm×6m	T:170g C:1.8kg	1.5kg	100g
Material	Paraffin wax	Microcrystalline wax	Butyl rubber	Butyl rubber+ inorganic additive	Butyl rubber	Epoxy	Chloroprene rubber	Silicon
Color	White	White	Light yellow	Dark green	Black	Main agent: Light milk white Curing agent: Light yellow	Black	Milk white
Features	Can be applied with a brush after melting through heating. Suitable for underlayer of multilayer coating.	Excellent cohesiveness makes it suitable for application to wall surface.	Minimal restriction in ultra-low temperature applications.	The clay-like shape ensures easy coating work. Operating temp. range is wide.	The tape shape facilitates coating work.	Highly effective mechanical protection makes it suitable for upper layer of multilayer coating.	Suitable for final finish of multi-layer coating.	Highly heat-resistant coating agent.

※When using, read the attached Instruction Manual carefully.

Accessories for High-Temperature Gages



HTG Series Accessories for High-temperature Gages

Description	Model	Specifications	Q'ty
High-temperature solder	HTG-S-B	Fusion temperature: 309°C Maximum operating temperature: 300°C	40 cm long bar x 2
Flux for high-temperature solder	HTG-S-F	Ingredients: Inorganic acid + alcohol	20g
Heat-resistant glass tube	HTG-G-TUBE	Inner diameter: 1.5 mm Length: 1 m	10 pieces
Heat-resistant Teflon tape	HTG-T-TAPE	Heat resistance: 200°C Width: 12.7 mm	32.9 m long
Heat-resistant glass tape	HTG-G-TAPE	Heat resistance: 350°C Width: 25 mm	33 m long

※The maximum operating temperature of 350°C for the high-temperature solder and the heat resistance of 350°C for the heat-resistant glass tape are applied to a short-term operation.

For further information please contact:

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