

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.

Models	Types	Operating Temperature Range (°C)	Major Applicable Materials	Curing Requirements
 CC-33A	Instantaneous adhesive cured at normal temperature	-196 to 120	<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 	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.
 CC-35	Instantaneous adhesive cured at normal temperature	-30 to 120	<ul style="list-style-type: none"> Concrete Mortar Lumber 	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.
 CC-36	Instantaneous adhesive cured at normal temperature	-30 to 100	<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, PCB, etc.) Concrete Mortar Lumber Rubber 	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.
 EP-270	Cured at room temperature	-269 to 30	<ul style="list-style-type: none"> Metals (Stainless steel, aluminum alloy, etc.) 	Apply pressure (50±20 kPa) for 24 hours at approx. 25°C
 EP-340	Cured at normal temperature or by heating	-55 to 150	<ul style="list-style-type: none"> Metals (Stainless steel, aluminum alloy, etc.) 	Apply pressure (100±50 kPa) for 24 hours at approx. 25°C or for 2 hours at 80°C. Pressing is possible with tape.
 EP-34B	Cured at normal temperature or by heating	-55 to 200	<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.) 	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.
 EP-180	Cured at normal temperature or by heating	-50 to 100	<ul style="list-style-type: none"> Metals (Steel, stainless steel, copper, aluminum alloy, etc.) Plastics (acrylate, PVC, etc.) 	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
 PC-600	Cured by heating	-269 to 250	<ul style="list-style-type: none"> Metals (Steel, stainless steel, copper, aluminum alloy, etc.) 	Apply Pressure (150 to 300 kPa) for 1 hour at 80°C, 2 hours at 13 0°C and then, 2 hours at 150°C
 PI-32	Cured by heating	-296 to 350	<ul style="list-style-type: none"> Metals (Steel, stainless steel, copper, aluminum alloy, etc.) 	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 h at 200°C may be changed to 5 h at 160°C with all other conditions followed.

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.



**Export controlled product:**

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

Ingredients	Capacity	Features	Major Applicable Gages
1 type of cyanoacrylate liquid	2g×1 or 2g×5	<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 temperature 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. 	KFG, KFGT, KFR, KFW, KFRP, KFRS, KFP, KFML, KSP, KSN (excl. E5), KSPH, KSPL, KFL, KFN, KFS, KFF, KCH, KV
1 type of cyanoacrylate liquid	2g×1 or 2g×5	<ul style="list-style-type: none"> •High viscosity makes it suitable for bonding to porous materials such as lumber and concrete. •Suitable for bonding a gage to porous materials such as concrete for general stress measurement at normal temperature of 20 to 80°C. 	KFG, KFGT, KFR, KC, KFRP, KFP
1 type of cyanoacrylate liquid	2g×1 or 2g×5	<ul style="list-style-type: none"> •Suitable for bonding a high-elongation gage such as KFEM and KFEL at normal temperature 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 	KFEM, KFEL, KFG, KFGT, KFR, KFW, KFWS, KFRP, KFRS, KFP, KFML, KSP, KSN (excl. E5), KSPH, KSPL, KFF, KV
2 types of liquid mixed,	50 g Main agent: 25 g Curing agent: 25 g	<ul style="list-style-type: none"> •Suitable for bonding gages for strain measurement at very low temperature. 	KFL
2 types of liquid mixed,	30 g Main agent: 6 g x 4 Curing agent: 1.5 g x 4	<ul style="list-style-type: none"> •Suitable for bonding gages for strain measurement at middle temperature. 	KFG, KFR, KFGT, KFF, KFS
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"> •Suitable for strain measurement at middle temperature and for bonding gages for transducers. 	KFRP, KFP, KFH
2 types of epoxy liquid mixed	30 g Main agent: 18 g Curing agent: 12 g	<ul style="list-style-type: none"> •Low viscosity makes it suitable for bonding gages (KFG-C20) embeddable in bolts. 	KFG (C20), KFW, KFWS, KFF
1 heating type of phenol liquid	100 g	<ul style="list-style-type: none"> •Suitable for strain measurement at low, middle and high temperature and for bonding gages for transducers. 	KFG, KFR, KFH, KFL, KFN, KFS
1 heating type of polyimide liquid	20 g	<ul style="list-style-type: none"> •Suitable for bonding gages for strain measurement at high temperature. 	KFU, KFH