

EP-270 Adhesive for KYOWA Strain Gages

INSTRUCTION MANUAL

Thank you for purchasing this KYOWA product. Before using it, please read this instruction manual carefully. Also, keep the manual within easy reach so that you can refer to it whenever necessary.

This is a special adhesive for Kyowa strain gages. Please do not use it for any other purpose.

1. Safety precautions

Be sure to observe the following safety precautions when using the adhesive.

	Warning! This warning applies where improper handling may cause serious injury to the operator.
● Keep the adhesive out of the mouth, or serious injury may occur. If swallowed, vomit the adhesive by immediately drinking copious amount of water, then see a physician. ● Keep the adhesive out of the eyes, or serious damage may occur. If the adhesive gets in the eyes, immediately wash the eye with water, then see an eye doctor. Use eye-glasses or other eye protector if necessary. ● Avoid handling the adhesive near fire, or it may ignite.	

	Caution! This caution applies where improper handling may cause deleterious effects to the operator's body or cause material damage.
● Keep the adhesive out of children's reach. ● Avoid skin contact with the adhesive, or a rash may develop. If it gets on the skin, immediately wash it off. Use gloves or other protector if necessary. ● While handling the adhesive, maintain proper ventilation. It will irritate eyes, nose and throat. ● Disposal of the adhesive should be handled by a qualified industrial waste disposal agent, as industrial waste.	

2. Outline of product

EP-270 is a 2 types (A, B) of epoxy liquid mixed adhesive which needs to be cured at room temperature. This will be the most suitable as an adhesive of Low-temperature foil strain gages KFL at extremely low temperature.

3. How to use

■ Surface-preparation

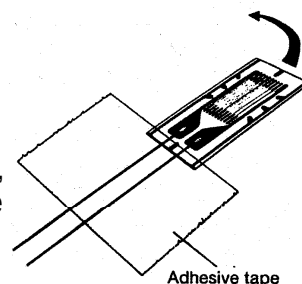
- (1) Remove rust, paint, oxidized coat, etc. from the measuring area on the surface of a measuring object, using a sander, wire brush, etc.
- (2) Using sandpaper (#300 to 600), finish the surface flat and smooth.
- (3) To clean the surface, wipe in one direction only with industrial tissue slightly damped with a solvent (such as acetone, isopropanol, etc.).
- (4) Scribe the gage guidelines on the bonding surface of a measuring object, using a lead pencil (4 to 6H in hardness) or the like.

■ Bonding a strain gage

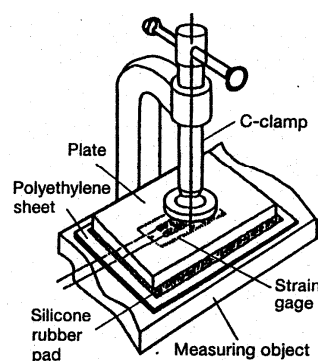
- (1) Take proper amounts of Ingredient A (main agent, colorless and transparent) and B (hardening agent, yellowish brown) in a stirring dish at the ratio described below, then stir then thoroughly.

$$A : B = 100 : 100 \text{ (weight ratio)}$$

- (2) (This should be done within 60 minutes after stirring) Using a toothpick or the like, apply a thin coat to the measuring object and also to the back of the strain gage.
- (3) Place the gage in place, align the gage's center mark with the guide line on the surface of the measuring object, cover the gage surface with a polyethylene sheet, then squeeze excessive adhesive out by pressing with the finger tip. At this time, the edge of the gage base may well be fixed using adhesive tape or the like to prevent moving.



- (4) Apply a pressure of $50 \pm 20 \text{ kPa}$ (reference value: $0.5 \pm 0.2 \text{ kgf/cm}^2$) to the gage installation via a cushion such as silicone rubber. (See the figure at right.)
- (5) Keep the gage installation under this condition for 24 hours at a normal temperature (25°C), then remove pressure, and the gage will be ready for measuring.



Pressure application sample using C-clamp

■ Other handling precautions

- (1) If the temperature of bonding part is low, curing will be delayed. In such a case, ensure a longer pressure application time.
- (2) If the mixing ratio of Ingredient A and B is faulty, the adhesive may fail to cure. Be therefore sure to observe the correct mixing ratio, depending on a balance, etc.
- (3) Please do not expose it to direct sunlight, but store at dark place whose temperature range from 5 to 35°C. We recommend the place where temperature is below 20°C.

4. General characteristics of EP-270

Ingredients	Ingredient A: Modified epoxy resin Ingredient B: Modified polyamide
Appearance	Ingredient A: Colorless and transparent, liquid Ingredient B: Yellowish brown, liquid
Operating temp. after curing	-269 to 30°C
Dilution agent	N / A