PC-600 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.

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 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 eye, immediately wash the eye with water, then see an eye doctor. Use eyeglasses or other eye protector.
- 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 ventilaton because it contains an organic solvent.
- Disposal of the adhesive should be handled by a qualified industrial waste disposal agent, as industrial waste.
- The adhesive is dedicated to KYOWA strain gages. Do not use it for any purpose other than bonding KYOWA strain gages.

2. Summary

PC-600 is a single-liquid phenol heat-curing adhesive applicable to strain gages such as KFG, KFR, KFH and KFL.
It is especially suitable for use with transducers which are demanded of long-term dependability.
The adhesive is also used to form an insulation layer when bonding a base-less semiconductor gage.

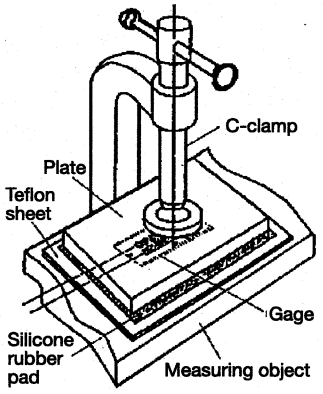
3. How to use

■ Surface-preparation procedures

(1) Remove rust, paint, gilt, etc. from the measuring area on the surface of a measuring object, using a tool such as a grinder or sander.
(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, using a lead pencil (4 to 6H in hardness) or the like. (The guidelines should not pass under the gage if precision measurement is aimed at as in the case of manufacturing transducers.)

■ Bonding a strain gage

(1) Put a small amount of PC-600 in a stirring dish, then using a toothpick or a paintbrush, apply a thin uniform coating of the adhesive to both the back of the strain gage and the measuring area, then leave them as they are for about 1 minute.
(2) Set the gage in place on the prepared surface to align with the previously scribed guide lines.
Cover the strain gage with a teflon sheet or the like, then apply a pressure of 150 to 300kPa to the gage installation via a cushion like a silicone rubber pad.
(See the figure at right.)



Pressure application sample using C-clamp

(3) Then cure the gage installation, observing the following heating process.

For 1 hour at 80°C,
2 more hours at 130°C,
and again 2 more hours at 150°C

(4) Gradually cool the measuring object down to room temperature, then remove the applied pressure.
(5) If high stability of the gage performance is demanded as in the case of manufacturing transducers, further age the gage installation to fulfill the following requirements. Do this after removing the applied pressure.

For 2 hours at 150°C

■ Other handling precautions

(1) In order to obtain quality adhesion of a gage, it is necessary to use a suitable pressure applying jig.
(2) The curing temperatures and times described above are the requirements that associate with the very gage bonding surface.
(3) In environments whose relative humidity is high (for instance, over 80%RH), avoid applying coatings of PC-600 as much as possible.
(4) When bonding a gage to a transducer especially, take care to keep dust and foreign matters from entering the adhesive layer. (For this purpose, a clean bench may well be used.)
(5) For storage, hermetically seal the PC-600 glass bottle and put it in a cool dark place such as a refrigerator (no freezing). Keep it from the direct rays of the sun. When uncorking the cooled bottle, warm it up to room temperature beforehand to avoid dew condensation.

4. General characteristics of PC-600

Ingredients: Phenol resin, acetone, methanol, butanol
Appearance, etc.: Liquid, light brown in color
Operating temperature range after curing: –269 to 250°C
Dilution agent: Acetone