



TK PASTE CR-3520 INSTRUCTION MANUAL

- Be sure to read this INSTRUCTION MANUAL and SDS before use and use product properly for your safety.
- Be sure to keep this Manual in easily referable place at any time.

[FEATURES]

One-liquid, easily-handled Ag paste which has high heat and electric conductivity. High reliability after heat cycle test with its low elastic modulus.

[CHARACTERISTIC VALUES & USE CONDITIONS]

Item	Characteristics	Note
Resistivity	$4 \times 10^{-5} \Omega \cdot \text{cm}$	Printed with W1mmxT0.1mm, cured at 180°C for 60min.
Thermal conductivity	20W/m·K	Steady method
Store Condition	-10°C or below	
Viscosity	20 Pa·s	E type viscometer @25°C 5rpm
Recommend curing condition	130°C×30min + 180°C x 60min	Cured in convection oven. Recommend step cure to avoid any voids.

[FOR SAFETY]

- The product is consisted of reactive epoxy. Do NOT mix the product with materials containing active hydrogen such as aliphatic amine and mercaptan, which may cause drastic heat-up or smoke.
- Epoxy resin has skin sensitization and may cause skin/eye irritation. Wear protective tools when using and pay attention not to touch the product with your skin or eyes.
- To prevent water contamination, leave the product tightly sealed at room temperature of 15°C to 25°C for 30 min. for thawing. Avoid forced heating including hot/warm water, oven and hot plate, or container may explode.
- Be sure to read Safety Data Sheet (SDS) before use for detailed description of the product, including its toxicity and emergency procedures.

[FOR BEST PERFORMANCE]

- Store the product at -10 °C or below.
- Before application, use cleaning solvent such as alcohol and acetone to clean adherend surface. If not clean, the product may not perform at its best.
- Properly cured product forms electrical paths. Inadequate curing may affect conductivity. Curing time to secure consistent conductivity varies depending on curing conditions including curing temperature and applied volume. Confirm appropriate curing conditions with actual work.



[USE METHOD]

I. Store

- Freeze the product at -10°C or below.
If stored at above -10°C, components deteriorate to affect characteristic values.
- Use the product from the oldest lot.
Lot# is put on the label on syringe.

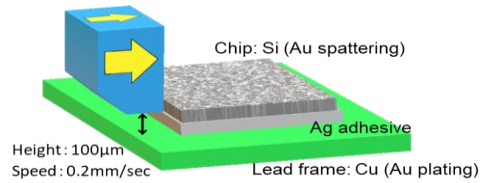
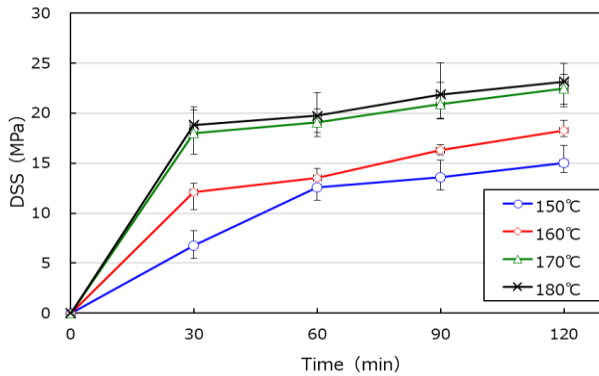
II. Use

- Read SDS carefully and follow below instructions.
If not properly handled, the product performance may deteriorate.

Procedure	Caution
1. Take the product from freezer, leave it tightly sealed at room temperature for more than 30 min., and bring it back to normal temperature. Wipe waterdrop off before open.	*Avoid forced heating including hot/warm water, oven and hot plate, or container may explode. *Wipe off any waterdrops that may appear on the container. Water contaminated product cannot be used.
2. Use cleaning solvent such as alcohol and acetone and clean adhered surface.	*Flux or oil left on adhered surface may limit product performance. *Dry well after cleaning. Cleaning solvent residue may damage adhesiveness.
3. Use dispenser to apply. Recommended internal diameter of needle is 0.1mm or larger.	*Needle with smaller internal diameter may clog the product. *Syringe is PSY-3E (made by Musashi Engineering). Please prepare applicable needles.
4. Properly cured product shows conductivity. (Recommended curing condition is 130oC x 30min. + 180oC x 60min.) Necessary time for consistent conductivity depends on curing conditions including temperature and application volume. Refer to the below graph and select appropriate curing conditions.	*Inadquate curing will result in poor property. please confirm the curing condition in advance. *Pot life of the product after thaw is 24hrs at 25°C. Avoid using products that passed pot life and be sure to dispose. Product characteristics may deteriorate under a warmer environment or any other conditions even within pot life. Manage the product suitably.

[Reference] Die shear strength curing at 150, 160,170, 180 oC

*Die shear strength(DSS)- One of the adhesive strength measured by below image.

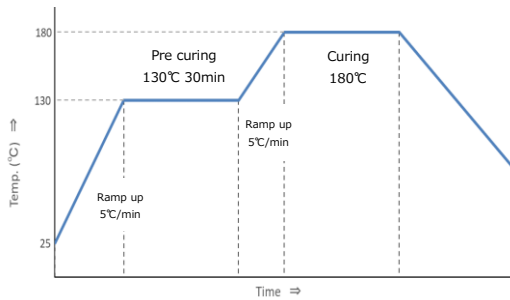


Measurement sample

Chip : Si (Au spattering) , Leadframe : Cu (Au Plating)

Measurement procedure

- ① Attach the Chip onto Leadframe with CR-3520.
- ② Cure by given time and temperature with convection over (before curing, pre cured with 130°C×30min)
- ③ After curing, take out the sample from oven, bring back to room temp. and measure the DSS.



Recommended curing condition

Pre-curing at 130°C×30min ⇒ Curing at 180°C×60min
(Temperature should be raised by 5°C/min)

III. Disposal

- Separate the product and anything exposed to it (such as used container with its residue and cloth to wipe it off at use) from other materials, and dispose.
- Use professional waste treatment service to dispose the product.