江门市阪桥电子材料有限公司

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Photo-imageable Etching and Plating Resist Ink

DH001 / PH1Sn / RS 1200

- Products with high resistance to surface spread (plain)

- Products with high resistance to acids eletrolitic baths, thereby preventing penetration of the bath beneath the pellicle

- Product developed for photo-recording with high resistance to acidic corrosion!

DH001/PH1Sn/RS1200　is a new kind of photoimageable etching and plating resist ink. Its excellent coating ability can be totally shown via various coating methods. Sharp definition, high accuracy and very minor under cut make it extremely suitable for producing one side, double-sided , high precision multi-layer and flexible PCB boards. It's acid-resistant ink which also good for the boards such as stainless steel , iron and aluminous material. The special characteristic is can be for Sn plating without post-cure. Series Etching Resist Ink has such features as below:

DH001/PH1Sn/RS1200

- Good adhesion and coverage power to copper clad of boards.
- Leveled ink coating with no separation, blistering void or pin-hole.
- Very good etching resistibility to ensure sharp definition of circuit without burring.
- Super high accuracy enables the minimum conductor width/clearance to 2/2mil (0.05/0.05mm)
- Remarkable mechanical properties like hardness, adhesion, wear resistance etc.
- Wide operating tolerance limits reduces the percentage of rework and reject.
- High photographic sensitivity reduces the degree of undercut.
- Easy removal of ink thus less the pollution.
- Low irritating to skin and eyes.
- Acid-resistant value: PH value 1-9, etching time less than 5min under 45±5℃

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Example of operation process:

1. Ink mixing
   Mixing(Shaking) well for 5-10 min.
2. Pretreatment
   Mechanical brushing or acid treatment.
3. Screen printing
   a. Use nylon, polyester or stainless steel screen for printing
   b. 100-250 mesh/inch.
   c. Rubber/Polyurethane (PU) Squeege with the hardness of -65-75 .
   d. Printing Angle 70-80
   e. Film thickness: 8-16 um
4. Precure
   First side 75±5℃ x 10 min
   Second side 75±5℃ x 15 min
   Both side cure at the same time 75±5℃ x 15 min
5. Exposure
   Energy required from UV rays:100-200mj/cm2
   Photographic sensitivity :300-500nm
   (Photosensitivity: 6-9 step)
6. Developing
   By 1-1.2% sodium carbonate (Na2CO3) solution
   Spraying pressure:2-3 kg/cm2
   Temperature: 35-45℃
   Time: 45-60 sec.
7. Stripping
8. The coating could be stripped completely with 3-5% NaOH solution at 45-50℃;
   Spraying pressure 2-3kg, 1-2 min

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Precautions:

1. Operation in a clean room of ambient temperature at 20-25℃/50-60% RH, under yellow(UV cut) lamp avoiding fluorescent and sunlight.
2. For cleaning the screen , use cleaner #950, ester or celloslove type solvent or a mixedsolvent of ester and collosolve.

3. Use an undiluted solder mask, in case of any viscosity adjustment, use the specified thinner no more than 3% .
4. Appropriate coating thickness on copper circuits after cure is 8-16 um. Coating less than the said value may cause lower resistivity in solder heat,chemical and Ni/Au plating, and thicker coat may cause undercut and insufficient tackiness.
5. Copper foil surface treatment has a effect on the proper functioning of etching resist inks. Therefore copper foil surface should be clean and free of oxidation absolutely. According to the degree and nature of the tarnish layer, select micro etching, mechanical brushing or both to ensure removal of any tarnish. Then rinse sufficiently with water and dry properly. Avoid treated surface to be touch by hand or come into contact with oil, grease or any dirty surface.
6. As curing condition and window are variable depending on the type of drying oven,the board curing may degrade the properties of coating film.
7. As exposure energy is variable depending on material type of substrates(UV absorbent, imide－type material , etc.) and on coating thickness, prior testing on resolution (no undercut) and shoot-through , etc. should be conducted to set the optimum condition.
8. Control well the quality of developing agent in its density , temperature, spray pressure and dwelling time. Insufficient control may cause deterioration in developablility or undercut.
9. The operating parameter recommended is proven to be effective by our R&D department and other industrial users. But the actual operating parameter my vary depends on the production situation of the end user.
10. If contact with eyes or skin, rinse with plenty of water. Do not wash with any solvent.
11. Use this ink in places to avoid any fire or flame
12. Store the ink in a cool place between 10-25℃ .