



UNION INKS

Product Information

Liquid Photoimageable Etch Resist-99-249

APPLICATION AND END-USE DESIGN

Photoimageable Etch Resist 99-249 is one-component liquid photosensitive photoimageable circuit ink with high resolution, excellent corrosion resistance and plating resistance. The coating method can be screen printing and roller coating, suitable for production of high-precision circuit boards

Properties	99-249
Color	Blue
Viscosity (25°C, VT-O4E)	50-80 poise
Film Hardness (After exposure)	App 2H
Adhesion	100/100
Pre-baking 75°C±5°C	Both sides 25-45 minutes
Development	1%Na ₂ CO ₃ aqueous solution, 30°C 2kg/cm ² pressure
Resolution	50 μm
Stripping	3~5%NaOH solution, 50°C, 3~5 minutes
Packing	5kg/pail, 20kg/box
Storage	6 months
Main properties	Excellent plating resistance and corrosion resistance

Remarks: * The rate of drying not only affected by the pre-baking temperature and time but also the thickness of the ink film thickness and the speed of air circulation.

Procedure	
Before Printing	Please stir for 5 ~ 15 minutes before use, if necessary, you can also add special diluent Adjust the viscosity in the ratio controlled below 3%, if other diluent are used need to do experiment before use to ensure the performance
Substrate pre-treatment	Mechanical grinding or chemical treatment to make the substrate clean and dry
Ink coating	1. Screen printing: Squeegee: 75shore 90° squeegee, Mesh: 77~100T threads per cm polyester mesh. 2. Roller coating: use a suitable coating machine the coating parameters can be adjust based on the thickness of the plate and the ink thickness required. Let stand for 5-20 minutes

Pre-bake	75°C±5°C, both sides at the same time for 25 ~ 45 minutes
	Cool down to room temperature
Exposure	100 ~ 200 mJ ² /cm (Achieve to the ink surface) 21-level light ruler is controlled at 7~9 level exposure machine requires more than 95%
	Let stand for 5-20 minutes
Development	Developer concentration: Na ₂ CO ₃ 0.8 ~ 1.2% Developer temperature: 28 ~ 32°C Spray pressure: 1.5 ~ 2.5kg/cm ² Development time: 40 ~ 60 seconds
Post bake	It is recommended to post-baking the plate for electroplating process, and the condition of the baking plate is 120±5°C, 10~15 minutes; Direct etching the board post-baking is not required.
Stripping	Board with Post-baked: Stripped in 5% NaOH at temperature of 50±5C and soak about 2~4 minutes Board without post-baking: Soak for 1~2 minutes same as above conditions.

Precautions:

1. Please store and operate this product in a dust-free place with temperature of 18-24°C and relative humidity of 55±5%RH. Use yellow light and avoid operating under white light or sunlight (either directly or indirectly).

2. This product should use directly without reducing, but if need to adjust the viscosity, special thinner need to be used and the ratio is controlled within 3%, after adding needs to be stirred for 3-5 minutes before use.

3. The surface treatment of the substrate has a critical influence on whether the ink film can fully exert its performance. Must ensure the surface of the board is thoroughly cleaned before printing, and there is no oxide layer and fully dry. Mechanical rubbing treatment to ensure the removal of oxides and oil, grease or other contaminants on the substrate surface, then thoroughly wash and dry completely, avoid finger contact and apply coating as soon as possible to avoid poor ink adhesion

4. When soldering, the ink generally requires post-bake, the post-bake condition is 120±5°C, 10-15 minutes or over UV Machine, UV machine energy requirements $\geq 200\text{mj}/\text{cm}^2$.

5. Exposure energy will vary with the thickness of the substrate and ink, please test to confirm the degree of side etching. It is determined again that the exposure ruler shall be controlled the residual film at the level of 7-9.

6. Developer concentration, temperature, nozzle pressure time etc., is crucial parameter so must well managed. The nozzle of the developing machine must be cleaned regularly to ensure that the

equipment can be used to achieve required development and washing effect.

7. After coating, it should be developed within 24 hours. If the operating place is hot and humid, the operation should be completed within 8 hours.

8. If you accidentally contact your skin or eyes, you must immediately rinse with soap and plenty of water, and do not use any solvents to clean.

9. This product is combustible, please do not place and use it in a place with flammable items.