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THERMAL CURABLE MARKING INK

S-100W N27

(UL Suffix : S-100WB)

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1. FEATURE

S-100W N27 is a single-component, thermal curable marking ink with usage of epoxy resin both in liquid and solid forms.

Features:

1. Less bleeding.
2. Excellent in printability, adhesion and color retention.

2. SPECIFCATION

Color	White
Viscosity	250 dPa.s (Cone prate model viscometer $5min^{-1}$ / 25℃)
Specific gravity	1.6
Standard curing condition	140℃ / 20min. (Hot air convection oven)
Shelf life	1 month after production (storage in dark place, 15℃ or below)

3. PROCESS

Process	Condition	Tolerance window
Laminate	FR-4 T= 1.6mm	
Surface preparation	Acid treatment → Water rinse (In case ink is applied to copper)	
Printing	#225 mesh Tetron screen	[180 ~ 250 mesh]
Postcure	140℃ / 20min. (Hot air convection oven)	[140℃ 20 ~ 30 min.]

4. ATTENTIONS in your process

* Recommendable workshop condition: Operation in a clean room of ambient temperature at 20 ~ 25℃ / 50 ~ 60% RH
* Open up the package when becoming ambient temperature. Stir well before use.
* Appropriate coating thickness on copper circuits after cure is 15 ~ 20 μm. 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 bad tackiness.
* As curing condition and window are variable depending on the type of drying oven, the board quantity to input, etc., set it suitable to your process after testing. Both shortage and excess in curing may degrade the properties of coating film.
* Printing screen is washable with ether or ester solvent.
* Avoid dilution as mush as possible. In case of dilution due to high viscosity, use “Reducer J”. As too much dilution affects the coating properties, please keep the quantity of solvent under 2wt%.
* In case of Ni/Au plating, curing time of legend ink should be considered for setting post cure condition of solder mask (Overcure causes lower Ni/Au resistance)

5. CAUTION

All chemicals used in this product might have unknown toxicity. Please handle with your most care referring to MSDS for use.

6. PROPERTIES

Item	Test Conditions	Result
Adhesion	Taiyo internal method Cross-hatch peeling test	100 / 100
Pencil hardness	Taiyo internal method No scratch on copper surface	6H
Solder heat resistance	Rosin based flux 260℃ / 10 sec. x 3 cycles of solder float	Passed
Solvent resistance	PGM-AC 20℃ / 30 min. immersion and tape-peeling	Passed
Acid resistance	10 vol.% H_2SO_4 20℃ / 30 min. immersion and tape-peeling	Passed
Alkaline resistance	10 wt.% NaOH 20℃ / 30 min. immersion and tape-peeling	Passed
Insulation resistance	IPC Comb type (B-pattern) Humidification: 25~65℃ cycle 90%RH DC100V loading for 7 days Measurement: After the above treatment, loading DC500V for 1 minute at room temperature.	Initial $4.0 \times 10^{12}\ \Omega$ Conditioned $6.0 \times 10^{11}\ \Omega$
Dielectric constant	Taiyo internal method 1MHz Humidification: 25~65℃ cycle 90%RH DC100V loading for 7 days Measurement: After the above treatment, loading DC500V for 1 minute at room temperature	Initial 7.0 Conditioned 7.5
Dielectric loss tangent	Taiyo internal method 1MHz Humidification: 25~65℃ cycle 90%RH DC100V loading for 7 days Measurement: After the above treatment, loading DC500V for 1 minute at room temperature	Initial 0.02 Conditioned 0.03

* All test data mentioned above in this technical data sheet are based on our laboratory test results and only for reference, not to guarantee the same in your process.

7. Attention

A. All chemicals in general may have unknown harmful effects. Your highest caution and care is required for handling. For the detail, refer to SDS.

B. No intentional usage of restricted substances in EU RoHS to this product and its production process; Namely Cadmium, Lead, Mercury, Hexavalent Chromium, PBB and PBDE, Phthalic esters(DEHP, DBP , BBP, DIBP).