

DATA SHEET

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PSR-2000 MT / CA-25 GL01

(PSR-2000AT / CA-25AA)

1. FEATURES :

PSR-2000 MT / CA-25 GL01 is liquid photo imageable solder resist ink (alkaline development type) used for screen printing application. It is a matt type with excellent properties such as high photo sensitivity, excellent electro-less gold plating resistance and solder heat resistance.

2. SPECIFICATION :

Main agent	PSR-2000 MT
Hardener	CA-25 GL01
Color*	Green (Matt finish)
Mixing ratio	Main agent : 85 / Hardener : 15 (By weight)
Viscosity*	160 \pm 20 dPa \cdot s (Cone / Plate Viscometer, 5min ⁻¹ / 25°C)
Tack free window*	80°C / 50 min (Maximum)
Specific gravity*	1.37
Exposure energy*	300 ~ 500 mJ/cm ² (on the solder mask)
Pot life*	24 hours (stored in dark place at less than 25°C)
Shelf life**	6 months (stored in dark place at than 25°C)

* : After mixing

** : After manufacturing

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/CA-25 GL01**3. PROCESS CONDITION**

PROCESS		RANGE
PWB	FR - 4 , 1.6 mm	
Pre-treatment	Acid treatment → brushing	
Printing	100 mesh-count	100 ~ 125 mesh
Hold time	10 min	10 ~ 20 min
Tack free	<ul style="list-style-type: none"> ➤ Both sides simultaneous exposure 1 st printing : 80°C / 15 min 2nd printing : 80°C / 25 min (Hot air convection oven) ➤ Single side exposure 80°C / 30 min (Hot air convection oven) 	80°C / 10~20 min 80°C / 20~30 min 80°C / 20~50 min
Exposure	400 mJ/cm ² (on the solder mask)	300 ~ 500 mJ/cm ²
Hold time	10 min	10 ~ 20 min
Development	Aqueous alkaline solution : 1 wt% Na ₂ CO ₃ Temperature of developer : 30°C Spray pressure : 0.2 MPa Developing time : 60 sec	0.2 ~ 0.25 MPa 60 ~ 100 sec
Post cure	Non-plugging : 150°C / 60 min Plugging : 80°C/30min→110°C/30min→150°C/60min	

4. ATTENTION ON EACH PROCESS :

- As to the operation environment. It is desirable to deal with the ink under the yellow lamps in the clean room. Please avoid using it under white fluorescent lamps or sunlight (directly or indirectly).
- The adequate thickness is 10 ~ 20 um (on the copper after curing).
Thin coating possibly reduces its solder heat resistance. On the other hand, thick coating possibly causes the under-cut or low tackiness.
- Please set the pre-cure conditions and tack free window after the confirmation test because they are influenced according to the type of the drying machine and the quantity of the board to be dried.

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- Please set the exposing energy after the confirmation test of under-cut, surface gloss, back side exposure and so on because it is influenced according to the material of the board, the thickness of ink, etc.
- Regarding the developing process, please control the developer density, the temperature, the spray pressure and the developer time, etc.
The inadequacy of control causes the degradation of the developability and the increase of under-cut.
- Please set the post cure conditions considering the curing time of the marking ink.
Insufficient curing or over curing may cause the degradation of properties.

5. CHARACTERISTIC

(1) TACK FREE TOLERANCE WINDOW :

Drying time (80°C / min)	40	50	60	70
Developability	○	○	△	NG

(2) PHOTO SENSITIVITY :

Item	Thickness	Energy	Developing time	Sensitivity
Sensitivity Kodak No.2 (Step density tablet)	22 ±2 μ m	300 mJ/cm ²	60 sec.	6 step
		400 mJ/cm ²		7 step
		500 mJ/cm ²		8 step
Resolution (Between QFP)	40 ±2 μ m	300 mJ/cm ²	60 sec.	50 μ m
		400 mJ/cm ²		50 μ m
		500 mJ/cm ²		50 μ m

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(3) PROPERTIES :

Item	Test method	Test result
Adhesion	GIF-007AA Standard Cross-cut tape stripping test	100 / 100
Pencil hardness	GIF-009AA Standard On copper foil, no Cu exposure	6H
Solder heat resistance	Solder float test : Rosin flux, 260°C / 30sec (1 cycle)	Passed
Solvent resistance	PMA dipping, room temp./ 30 min Scotch tape stripping	Passed
Acid resistance	10 vol % H ₂ SO ₄ , room temp./ 30 min Scotch tape stripping	Passed
Alkaline resistance	10 wt% NaOH, room temp./ 30 min Scotch tape stripping	Passed
Insulation resistance	IPC comb type B pattern Humidification : 25~65°C cycle 90% RH DC100V loading for 7 days Measurement : After the above treatment,loading DC500V for 1 minute at room temperature	Initial : 3.2 ×10 ¹³ Ω After : 6.2 ×10 ¹¹ Ω
Dielectric constant	JIS C6481 1 MHz Humidification : 25~65°C cycle 90% RH for 7 days	Initial : 4.0 After : 4.4
Dissipation factor	JIS C6481 1 MHz Humidification : 25~65°C cycle 90% RH for 7 days	Initial : 0.022 After : 0.036
Electroless gold plating	Ni 3 μm Au 0.03 μm	Passed

Note : The above-mentioned test data is just for reference, not to guarantee the result.

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6. Attention

- A. Operate in area supported by local exhaust or general room ventilation to avoid build-up of high concentration of solvent vapors.
- B. Use gloves and apron during operation. Wash with soap and water if ink is attached to the skin.
- C. Wash hands and face with soap and water. Rinse out the mouth before eating or smoking.