

**TECHNICAL
DATA SHEET**PSR-800 AUS SR1
MS- 00254301
Feb.2016

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**PSR-800 AUS SR1**

(UL suffix: PFR-800AD)

1. FEATURES

PSR-800 AUS SR1 is a Dry film type photo imageable solder mask especially developed for IC package with following features.

- a) Excellent in Thermal Cycle resistance
- b) Excellent HAST resistance
- c) Halogen free

2. SPECIFICATION

Product name	PSR-800 AUS SR1
Color	Green
Thickness	20um \pm 2um
Exposure energy	High mercury short arc lamp(Contact exposure) 500mJ/cm ² (On career film)
Shelf life	12 months from manufacturing date (Stored at -15deg.C or below)

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3. PROCESS CONDITION

Process		Range
Pre-treatment	CZ8100 (etching 1.0um) → CL8300 (Anti-tarnish treatment) → Drying	
Lamination	Vacuum laminator (CVP-300, Nichigo-Morton)	80-100deg.C
	1 st chamber Temperature: 100deg.C Vacuum: 30sec. at 3hPa Pressure: 30sec. at 0.5Mpa	
	2 nd chamber Temperature: 80deg.C Pressure: 60sec. at 8Kgf/cm2	60-80deg.C
Exposure	Contact exposure machine ORC MANUFACTURING CO.,LTD EXP-2960 Luminance: 35mW/cm2 500mJ/cm ² (on career film) Ambient temp 23.5 +/- 0.5deg.C	400-500mJ/cm ²
Hold time	10min	10-20min
Development	Aqueous alkaline solution : 1wt% Na ₂ CO ₃ Temperature of developer : 30deg.C Spray pressure : 0.2MPa Developing time : 90sec	90-120sec
Water rinse	Temperature of rinsing water : 25deg.C Spray pressure : 0.1MPa Rinsing time : 45sec	
UV Bump	1000mJ/cm ² (High pressure Mercury Lamp)	500-1000mJ/cm ²
Post cure	160deg.C / 60min (Hot air convection oven)	45-90min

*In case of applying marking ink, solder mask should be cured at 150deg.C for 30 minutes, then marking ink should be cured at 140deg.C for 20 minutes x 2 cycles. In case no marking ink is applied, solder mask should be cured at 150deg.C for 60 minutes.

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4. ATTENTION IN 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).
- Open up the package when the product becomes ambient temperature not to cause dewing.
- Lamination under high temperature causes thin coating thickness on track and it tends to be lower resistance in solder heat, chemical and Ni/Au plating.
Lamination under low temperature may affect conformability of the resist film to the tracks.
- Laminating conditions are variable depending on the types of machine, the size of board, etc. Set an optimum condition by your own.
- 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.
- In order to ensure ENIG resistance, please set up appropriate post cure conditions with considering final baking of marking ink. ENIG resistance could be deteriorated due to over baking.

5. CHARACTERISTIC

(1) PHOTONSENSITIVITY

Item	Thickness	Energy	Developing time	Sensitivity
Sensitivity Stouffer (Step density tablet)	20 +/- 2um	400mJ/cm ²	90 sec.	7 step
		450mJ/cm ²		8 step
		500mJ/cm ²		9 step

The exposure energy is measured on career film.

 (Specification: Under mylar film, >5 step at 400-500m J/cm²)

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(2) END PROPERTIES

Item	Test method	Test result
Adhesion	TAIYO Internal Test Method Cross-cut tape stripping test	100 / 100
Pencil hardness	TAIYO Internal Test Method (No scratch on Cu foil)	7H
Solder heat resistance	Solder float test : Rosin flux, 260deg.C/30sec (1cycle)	Passed
Solvent resistance	PGM-AC dipping, temp 20deg.C/30min, Scotch tape peeling test	Passed
Electroless Ni/Au Plating resistance	TAIYO Internal Test Method Ni: 3um / Au: 0.03um	Passed
HAST	L/S=15/10um, 130deg.C/85%RH/12V/168 <JEDEC JESD22-A110-B> <JEDEC J-STD 020C: Condition 2a, Reflow 3 cycle>	Passed
TCT	-65deg.C ↔ 150deg.C, 500cycle <JEDEC JESD22-A104-C: Condition C, 2 cycles/HR> <JEDEC J-STD-020C: Condition 2a, Reflow 3 cycles>	Passed

6. ATTENTION

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

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

*No intentional use of RoHS 2.0 subjected 10 substances (Lead, Cadmium, Mercury, Hexavalent-chromium, PBBs, PBDEs, DEHP, DBP, BBP and DIBP) for this product.