TECHNICAL DATA

LONGLITE® DRY FILM PHOTO RESIST

FF-9075S

Chang Chun Chemical (Jiangsu) Co., Ltd.
Changchun Rd.,Riverside Industrial Park,
Changshu Economic Development Zone,
Jiangsu 215537, China
TEL: 86-512-5264-8000 (Rep)
FAX: 86-512-5264-5556
WEB: www.ccp.com.tw

SUMMARY

LONGLITE® Dry Film Photo Resist FF-9075S is negative working and aqueous photo polymer. FF-9075S is suitable for the applications of acidic etching, tenting, copper / tin plating, and copper / tin-lead plating in PCB manufacturing.

FEATURES

1. Excellent adhesion and conformation capability.
2. Excellent chemical resistance for plating application.
3. Excellent resolution characteristics.
4. Wilder latitude for exposure.
5. Wider margin in development.
6. High tenting reliability.
7. Low sludge in development bath.
8. Less contamination to plating bath.

SPECIFICATION

FF-9075S 75μm ± 2μm
Standard width interval : 0.125 inch.
Standard length : 500 ft / roll

STORAGE AND SAFTY HANDLING

- Store horizontally in a cool and dry warehouse with temperature 5~20℃and RH 50±10%.
- Safe to use under UV-cut yellow fluorescent lamps. When not using, seal by black sheet such as its original black plastic packing sheet, and lay down dry film rolls horizontally for storage.
- Lamination will cause vapor, use in room with adequate ventilation.
- Avoid contacting the resist layer of dry film with skin directly which may cause irritation. Wash with soap and water thoroughly after handling. If persistent irritation occurs, consult a physician.

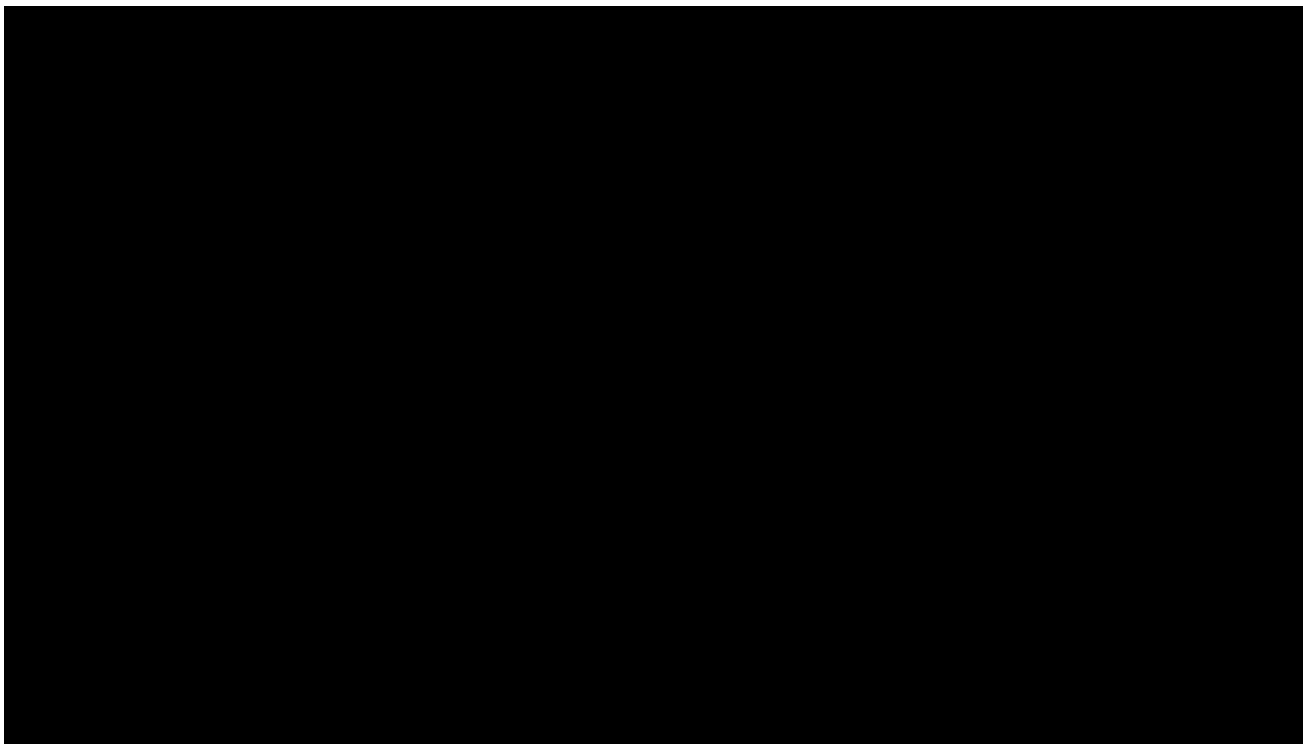
ϖLONGLITE® is the registered trade mark owned by CHANG CHUN PLASTICS CO., LTD.

SENSITIVITY AT VARIOUS EXPOSURE ENERGIES

Grade		FF-9075S
Developing time		96 sec (B.P 48sec)
Exposure Energy mJ/cm^2	20	6
	30	7
	40	8
	50	9
	60	9. 5
	70	10
	80	10.5
	90	11
	100	11.5

*Data for reference

※ Exposure was given by placing Stouffer 21 step guide directly in contact with DFR, and counted the steps still remaining after development.



RESOLUTION AT VARIOUS EXPOSURE ENERGIES

Grade		FF-9075S
		Space (μm)
Exposure Energy mJ/cm^2	20	60
	30	60
	40	60
	50	80
	60	80
	70	100
	80	125
	90	150
	100	150

*Data for reference

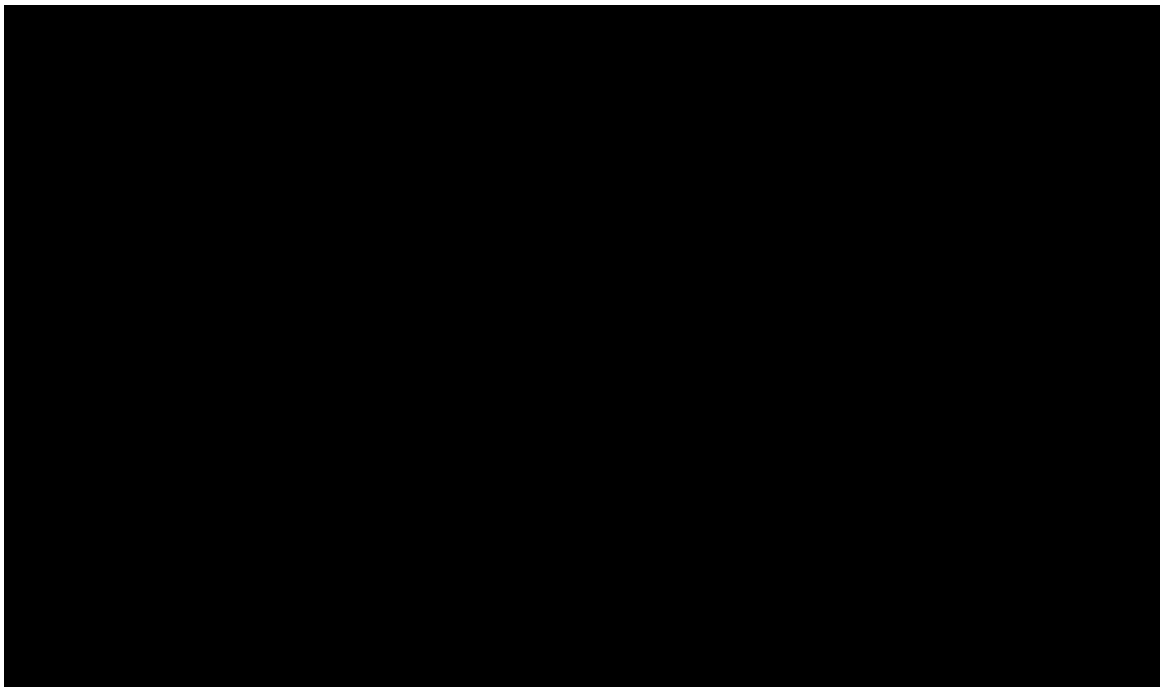
※ Test pattern: CCP Pattern 1 (L/S = 1/2), from 20 to 200μm 5 "L" shape lines each.

ADHESION AT VARIOUS EXPOSURE ENERGIES

Grade		FF-9075S
		Line (μm)
Exposure Energy mJ/cm^2	20	125
	30	100
	40	80
	50	60
	60	60
	70	60
	80	50
	90	50
	100	50

*Data for reference

※ Test pattern: CCP Pattern 1 (L/S = 2/1), from 20 to 200 μm 5 "L" 1shape lines each.



VARIATION IN RESIST WIDTH AT VARIOUS EXPOSURE ENERGIES

Grade		FF-9075S
		Width Variation (μm)
Exposure Energy mJ/cm^2	20	-5
	30	-2
	40	0
	50	2
	60	5
	70	5
	80	10
	90	15
	100	18

*Data for reference

※ Measuring resist width variation from test pattern after development. Test pattern L/S= 100 / 200μm.

STRIPPING

		Stripping time (sec)			Stripped piece		
Stripper	NaOH	2%	3%	4%	2%	3%	4%
Temperature	50^0C	157”	150”	144”	MS	MS	L
	55^0C	151”	141”	127”	MS	M	M L
	60^0C	141”	128”	120”	M	M L	M L

*Data for reference

※ Exposure : 40 mj/cm^2. (Step 8by SST 21 step)

※ Tested by dipping.

※ Stripped piece size:

LL :sheet
L : about 3 cm
ML : about 2 cm.
M : about 1 cm.
MS : about 0.5 cm
S : about 0.3 cm

TENTING

strength (g)	590.1
Time(sec)	4.37

Remark：

a. Data for reference
b. Step：8 Step
c. Gauge：ϕ2mm.
d. Speed：10mm/min.
e. Board：ϕ6mm, thickness 1.6mm.

RECOMMENDED OPERATION CONDITIONS

- Surface pretreatment:

Method	Inner : Chemical brush, Pumice brush
	Outer : Buffering brush + Pumice brush
Water break test:	At least 15~30 sec (vertically)

▶ Don't dry board with hot air directly while the board surface still has water on it.

▶ Recommended surface roughness：R_a=0.2~0.4 μm ， R_z=1.5~2.5 μm

- Lamination:

Roll temperature:	110±10℃
Pressure:	3~5 kg/cm^2
Speed:	1.0~3.0 m/min
Seal bar temperature:	55~65℃
Seal bar pressure:	2~5 kg/cm^2
Seal time:	1.5~2 sec
Board temperature before lamination:	40~60℃
Board temperature after lamination:	45~55℃
Holding time①	15 min~2days (23±2℃, 50±10% RH)

▶ The temperature and pressure of the roll should be adjusted in accordance with the structure of the particular laminator.

▶ To shade the panels when leaving them for more than six hours under a UV-free yellow light.

- Exposure:

Energy:	30~60 mj/cm^2
Step:	7~9 step of Stouffer Sensitivity Tablet 21 step
Holding time②	15 min~2days. (23±2℃, 50±10% RH)

▶ Holding time① + Holding time② < 4 days

- Development:

Developer:	0.8~1.2 wt% Na_2CO_3
Temperature:	26~30℃
Pressure:	1.2~2.0 kg/cm^2
Break point:	1/2~2/3

▶ Water rinsing after development is recommended to be done at 15-25℃and a spray pressure of 1.2-2.0 kg/cm^2

▶ Keep the pH of rinsing water in the first tank below 8.5

▶ The loading content for resist should be adjusted to 6g/l or less.

- Etching:

Type	Acidic
Etchant:	Cupric chloride or Ferric chloride

- Stripping

Stripper:	2.5~3.0% NaOH or KOH
Temperature:	50±5℃
Pressure:	1.0~3.0 kg/cm^2
Lifting point:	1/2~2/3

▶ The loading content of resist should be adjusted to 20g/l or less.

▶ Water rinsing after stripping is recommended to be done at spray pressure of 1.0kg/cm^2 or more.