

These instructions are for use with Clariant AZ 1518 photoresist (PR), lift-off resist (LOR-10B) and 3:1 PI2555:NMP to produce patterned structure shown in [Fig 1]. The developers AZ400K and MIF-319 (metal-ion-free) are used.

PR+LOR10B-Patterned Polyimide (~1cm² samples)

- Spin PI using PI2555 3:1 spin parameters in table.
Note: See SCS SpinCoater manual.
- Harden PI at 100°C for 8-12 s on hotplate.
Note: See DataPlate® Hotplate manual.
Note: Watch for film hardness that usually occurs within 8-12 s. Film hardening may be observed at a glancing angle.
- Spin LOR-10B using spin parameters in table at right.
- Soft bake at 100°C for 60 s.
- Spin PR using spin parameters in table at right.
- Soft bake PR+LOR+PI at 100°C for 45 s.
- UV expose for 30 s.
Note: See Karl Suss Mask Aligner manual.
- Develop in 1:4 AZ400K 30-45 s. [Fig 2]
- Rinse, dry, and inspect.
Note: Further-develop if necessary in increments of 5-10 s until PI film is micro-cracked. [Fig 2]
- Develop PI in 100% MIF-319 30-40 s.
- Rinse, dry, inspect, and further-develop if necessary in increments of 5-10 s until PI film is fully developed.
- Final bake PI at 200-250°C for 30-60 min.

PR + LOR-10B + PI2555 3:1 on 3" Wafers (patterned headers)

- Spin PI using PI2555 3:1 spin parameters in table with the following exceptions:
RPM3 = 5000, RAMP3 = 5, TIME3 = 60
- Harden PI at 100°C for 20 s.
- Perform steps 3-12 above.

Notes:

- A good hard bake temperature permitting PR removal without removing PI is 150°C. PR can then be removed with AZ400K and/or acetone without removing PI.
- AZ400K *will* remove PI, LOR and PR as long as bake temperature is no more than about 100°C. However, using it to remove *patterned* PI results in jagged edge profiles.
- During developing, film will appear to quickly brighten and "shatter". This is due to appearance of micro-cracks in regions of exposed PI. [Fig 2] Micro-cracks appear to promote subsequent development of PI film by MIF-319. If MIF 319 is used throughout process (PR develop + PI dissolution) resulting PI edges will be jagged and may over-dissolve narrow regions.
- PI manufacturer recommends final PI temperature of 350°C - 400°C for prevention of outgassing during subsequent processes at higher temperatures.

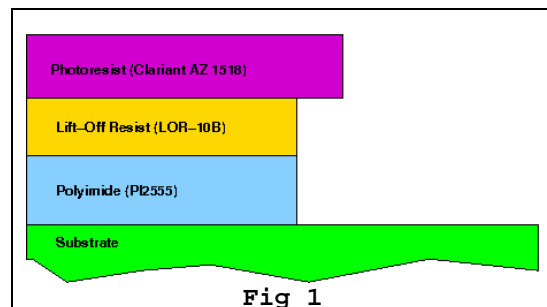


Fig 1

Spin Parameters

PI2555 3:1

RPM1 = 900
RAMP1 = 5
TIME1 = 5

RPM2 = 4000
RAMP2 = 6
TIME2 = 5

RPM3 = 5000
RAMP3 = 5
TIME3 = 30

LOR-10B & PR (1518)

RPM1 = 2000
RAMP1 = 2
TIME1 = 1

RPM2 = 3000
RAMP2 = 1
TIME2 = 1

RPM3 = 4000
RAMP3 = 1
TIME3 = 30

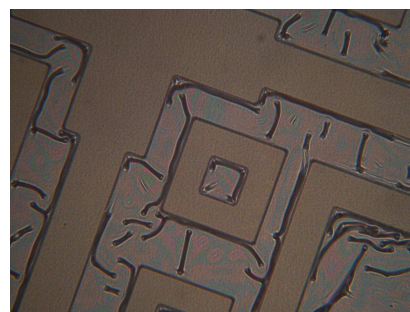


Fig 2