Typical Procedure

1. Preheat hot plates to 60ºC and 100ºC.
   Note: See `DataPlate® Hotplate` manual.
2. Clean sample in acetone, methanol, isopropanol solution at 60ºC for 5 min.
3. During this time,
   - Prepare two small baths (~25 ml each) of 1:4 [`400K developer:DI` H_2O].
   - Start mask aligner. See `Karl Suss Mask Aligner` manual.
   - Start spincoater. See `SCS SpinCoater` manual.
   - Program appropriate spin parameters as recommended at right.
4. Remove solvent from hotplate; change hotplate temperature to 150ºC.
5. Dry sample with compressed N_2; clean in diluted developer by dipping for 40 sec in first bath, 20 sec in second bath.
   Note: Second bath will be cleaner and may be used later. Dispose of first bath. Prepare small bath (~25ml) for later use, and set both aside.
6. Rinse sample in acetone, then methanol, then isopropanol.
7. Dry with compressed N_2.
8. Place sample on spincoater chuck. (A test spin is recommended.)
9. Cover sample completely with `LOR (10B` or `30B`).
10. Press `Start` button and allow spin recipe to complete.
    Note: If resist appears on backside of sample, drop 2-3 drops of `EBR remover` on clean room towel and carefully glide backside of sample across wetted area. Take care not to expose topside to remover.
11. Bake on 150ºC hotplate for 5 min; change hotplate temperature to 110ºC.
12. Cool sample on cold surface for 10 sec.
13. Spin-test sample on spincoater.
14. Cover sample completely with `Clariant AZ 1518` photoresist .
15. Press `Start` button, and allow entire spin recipe to complete.
    Note: If resist appears on backside, clean with `EBR remover`
16. Soft bake on 100ºC hotplate for 45 sec.
17. Cool sample on cold surface for 10 sec.
18. Select chrome or FeO mask and rinse pattern-side of mask with acetone.
19. Dry mask thoroughly with compressed N_2.
20. Develop sample by dipping in 1:4 developer for 40 sec, then 20 sec in a second bath.
21. Rinse with DI water and dry with compressed N_2.
22. Inspect photoresist pattern quality using a microscope.
23. If pattern quality is good, hard bake on 110ºC hot plate for 5 minutes.
    Note: Further develop in 10 sec intervals if needed. Otherwise, strip PR and LOR thoroughly with acetone and begin again.
24. Remove sample from hotplate and cool on cold surface before storing in carrier.
25. Turn off hotplates, aligner, spincoater and microscope.

Clariant AZ 1518
RPM1 = 2000
RAMP1 = 2
TIME1 = 1
RPM2 = 3000
RAMP2 = 1
TIME2 = 1
RPM3 = 4000
RAMP3 = 1
TIME3 = 30

LOR-10B
RPM1 = 2000
RAMP1 = 2
TIME1 = 1
RPM2 = 3000
RAMP2 = 1
TIME2 = 1
RPM3 = 4000
RAMP3 = 1
TIME3 = 30

LOR-30B
RPM1 = 500
RAMP1 = 2
TIME1 = 1
RPM2 = 900
RAMP2 = 5
TIME2 = 1
RPM3 = 1000 – 1500
RAMP3 = 1
TIME3 = 30 – 60

Clean-Up

1. While photoresist is hard-baking, remove glass mask from mask chuck and clean patterned side with acetone to remove any residual PR. Dry with compressed N_2 gas, and return to protective case.
2. Clean up wet bench by disposing of solvents and developer.
   Note: Never leave open solvent waste bottle in sink. This is a violation of chemical safety procedure.
3. Rinse glassware and used containers with DI H_2O, return upside down on drying rack.
4. Dry bench top.