

PMMA Resist Process (950A2 or 950A4) (Typically Used For Metal Liftoff Processes)

Spin Coating and Baking PMMA 950A2 or 950A4

Typical process:

1. Apply ~1ml of PMMA to your substrate.
2. Spin at 500 rpm for 5 seconds, followed by 3000 rpm for 40 seconds.
3. Hot plate bake at 180 °C for 2 minutes.

*Visit http://microchem.com/pdf/PMMA_Data_Sheet.pdf for detailed information regarding the particular PMMA resist you are using. Also see the spin speed curves provided below.



Post EBL Develop Processing

1. Following e-beam exposure, develop in 1:3 MIBK:IPA (Isopropanol)
2. For 100nm PMMA films, the typical develop time is 60 seconds.
3. For 300nm PMMA films, the typical develop time is 140 seconds.
4. Stop the development by soaking the sample in pure IPA for 30 seconds.

ZEP520A Resist Process (As Suggested by Elionix)

(Typically Used For RIE Etch Processes)

100nm

Thinned

Resist

ZEP-520A : Anisole = 1 : 1.5
(Volume)

Spin:

1	500rpm	7sec
2	5000rpm	80sec

Bake: 180 degree, 2min

300nm

Standard

Resist

No Anisole (Only ZEP-520A)

Spin:

1	500rpm	7sec
2	5000rpm	80sec

Bake: 180 degree, 2min

Develop Process For ZEP520A

1. O-Xylene (>95% Purity).
2. 240-300 sec for 300nm ZEP520A.
3. 30-40 sec for 100nm ZEP-520A.
4. Rinse with IPA for 30secs.

ZEP520A is typically used as an RIE Etch Mask, with better selectivity than PMMA. Contact SMIF for more information regarding this issue. ZEP520A is easily removed in 1165 Stripper (NMP) at 60C.

*See the ZEP520A Technical Report below for more detailed information.

<http://smif.pratt.duke.edu/sites/smif.pratt.duke.edu/files/operating/ZEP520ATechReport.pdf>