

# AZ Photoresist Process Guideline

1. Dehydrate wafer at 200 °C for at least 10 minutes (if possible)
2. Spin coat HMDS with recommended spin program below. (\* before spinning leave HMDS puddle on the substrate for 30 s)

Resist name	Spin speed*	Layer thickness	Prebake at 115 °C	Exposure dose (mJ/cm <sup>2</sup> ) for Si Substrates*	Develop with AZ-726 developer
AZ-1505	4000rpm	0.488um	1.5 min	12.3	1 min
AZ-1518	4000rpm	1.71um	1.5 min	43-45	1 min
AZ-4562	6000rpm	5um	1.5 min	396	2-3 min

## \* Exposure time calculation:

To calculate the exposure time in seconds, divide exposure dose (mJ/cm<sup>2</sup>) by the lamp power (mW/cm<sup>2</sup>).

## \* Recommended spin program:

1. Dispense resist on substrate
2. Spin at 500 rpm for 5-10 seconds with acceleration of 100 rpm/s.
3. Spin at recommended speed (table above) for 40 s with acceleration of 1000 rpm/s.
4. Final step is deceleration with spin speed 0 rpm for 0 s, with 1000 rpm/s ramp.
5. If the lithography is for lift-off, O<sub>2</sub> plasma ashing is required before evaporation in order to remove HMDS.

**IMPORTANT: DO NOT FORGET TO CLEAN BACKSIDE OF SAMPLE CHIP WITH Q-TIP AND ACETONE BEFORE SOFT BAKE!**

# AZ-5214 Image Reversal Photoresist - Process

## Guideline

1. Dehydrate wafer at 200 °C for at least 10 minutes (if possible)
2. Spin coat HMDS with recommended spin program below. (\* before spinning leave HMDS puddle on the substrate for 30 s)

FILM THICKNESS ( $\mu\text{m}$ ) as FUNCTION of SPIN SPEED:

spin speed (rpm)	3000
AZ-5214E	1.4-1.5 $\mu\text{m}$

PROCESSING GUIDELINES:

1. Spin resist on substrate
2. Prebake 110°C, 1.5 min., hotplate
3. Exposure dose for 1.4-1.5  $\mu\text{m}$  film thickness is  **$\sim 15 \text{ mJ/cm}^2$**   
  
**\* To calculate the exposure time in seconds, divide exposure dose ( $\text{mJ/cm}^2$ ) by the lamp power ( $\text{mW/cm}^2$ ).**
4. Reversal bake 120°C, 2 min., hotplate (most critical step)
5. Flood exposure  $> 200 \text{ mJ/cm}^2$
6. Development AZ 351B, 1:4 (tank, spray) or AZ 726 (puddle)
7. Postbake 120°C, 50s hotplate (optional)
8. If the lithography is for lift-off,  $\text{O}_2$  plasma ashing is required before evaporation in order to remove HMDS.