Standard Photoresist Procedure

KSU LCI Cleanroom: Front Room

**Shipley S1818 Photoresist**

0. Our standard photoresist spinning reagent is: (Shipley S1818 : Type P Thinner), (3:1) mixture.

1. Using this standard photoresist reagent, apply reagent to clean substrate in spinner.

2. Use a prespin step of 2 seconds at 500 rpm, with a ramp of 500 rpm.

3. Use a spin step of 30 seconds at 1500 rpm, with a ramp of 1500 rpm.

4. Use a spin down step of 1 second at 50 rpm, with a ramp of 1500 rpm.

This procedure produces a resist film of a consistent thickness, although the actual value is not known.

The Shipley specification sheet states that if you spin the S1818 material, undiluted, at 4000 rpm for 30 seconds and then flash at 90C for 90 seconds, you should end up with a film thickness of about 1.8 um.

There are many factors that determine the actual thickness including the solvent environment in the spinner and ambient temperature during spinning (both change from plate to plate).

The above procedure will generate our standard photoresist film thickness. Regardless of the actual value of the film thickness, the downstream processes are designed to work with this value. The UV mask exposure dose is designed to work with this film thickness, also our wet developing time and our stripping time are as well. Any changes to the resist formulation, or spin parameters, may result in the need to modify the subsequent photoresist processing steps.

The use of other photoresists will require some process engineering to determine the correct processing parameters for reagent dilution, spin parameters, UV exposure dose, and wet processing requirements.