SU8 Handling Protocol – Headway and Heidelberg 2 – Please read before using SU8 in Heidelberg2. Please follow all the protocols.

Introduction

- When working with SU8, it is important to remember that one person's resist is another's contaminant. One must make sure that each part of a process is accompanied by steps to prevent and eliminate SU8 contamination of lab equipment.
- Remember that SU8 is a flammable and toxic substance. Refer to the MSDS sheet for complete hazard information.
- Before working with SU8, make sure that you are double-gloved.
- Like all chemicals in the SNF, SU8 and SU8 developer should be transported in a metal cart. Return these items to the flammable chemical storage bin in which they are kept as soon as you are done using them. Do not leave them out unattended.
- Wafers must be transported in a personal cassette only. Using lab cassettes will contaminate them, any wafers subsequently placed in them, with SU8.
- Any personal equipment such as cassettes, glassware, or tweezers used to handle wafers coated with SU8 must be labeled with your Badger login and a warning of SU8 contamination. This equipment should only be used with wafers coated with SU8 and only in equipment approved for use with SU8.
- If you have any questions with regard to handling SU8 in the laboratory, please do not hesitate to ask Swaroop Kommera. Asking questions now will prevent mistakes in the future that could be costly, both in terms of time and money, to correct.
- Refer to http://www.microresist.de/en/ for more information on spin speeds. These are great starting points, but may require adjustment.

Preparation and Priming

- A piranha clean is recommended to increase uniformity and coverage of spincoating.
- Priming the wafer with HMDS in the yes oven or on the svgcoat track is recommended to increase adhesion of SU8 to the wafer. Wafers must be free of photoresist prior to priming in the yes oven.

Spincoating

- Spincoating SU8 must be performed in the spinners that allow SU8 (Laurell, Headway3 for example) to prevent contamination of other instruments. Please refer to Laurell instructions on how to spin SU8 in Laurell. The following instructions are for Headway3.
- The basin and rim must be covered in several layers of clean aluminum foil. The previous user should have done this, but it is your duty to make sure this has been done before you use it.
- After dispensing resist on the wafer, either move it to your personal cassette or begin prebaking. See the following Prebaking section for proper protocol during this step.
- When you are done spincoating, remove all aluminum foil from the instrument and place it in a plastic bag. Remove your gloves and place them in the bag. Seal the bag and put on a new pair of gloves.
- Inspect the basin and benchtop. Remove any SU8 from these surfaces by first with acetone followed by isopropanol. Place any used wipes in the plastic bag.
- Deposit the bag in the trash bins next to the wbexfab_dev bench.

- When you are confident the headway3 is free of SU8, cover the basin and rim in several layers of fresh aluminum foil.
- If photoresist is present on the headway3 when a labmember comes to use it, it is that labmember's responsibility to report the problem on Badger and clean up the photoresist. The previous user will be placed on Community Service.
- Please make sure you remove any SU8 on the back side of your wafer using a Qtip and acetone/IPA. The backside of the wafer needs to be absolutely clean.

Prebaking and Postbaking

- Baking wafers coated with SU8 must be performed on a hot plate covered with aluminum foil. This will prevent contamination of any subsequent users' wafers with your SU8.
- When baking is completed, remove the aluminum foil from the hot plates and place it in a plastic bag. Dispose off the bag properly.

Exposure

- **SU8 exposure is allowed only in Heidelberg2 and not in Heidelberg 1.**
- **Use only SU8 chuck for Heidelberg2 for SU8 wafers. DO NOT USE THE CLEAN CHUCK.**
- **SU8 on wafers must be cured (prebaked) prior to use in any exposure instrument (for example Heidelberg 2). Never place an uncured wafer on any exposure chuck!**
- **Please make sure the backside of the wafer is absolutely clean before placing the wafer on the Heidelberg 2 SU8 chuck**.
- **Please place a clean room wipe on the Heidelberg2 SU8 chuck before you place your wafer.**
- **Wafers coated with SU8 can only be exposed on Heidelberg 2, karlsuss and evalign instruments. Use of any other exposure instrument (including Heidelberg1, ASML) is strictly prohibited.**

Development

- **These instructions are for developing SU8 in Wbexfab_solv.**
- Development of wafers coated with SU8 must be done in personal glassware in the solvent bench (wbexfab_solv on the right side). Remember that this dish must be labeled as SU8 contaminated.
- SU8 developer is very volatile. To prevent its fumes from reaching the common lab environment, the developer dish must be placed in the rear of the fumehood.
- A "in use chemicals" card must be filled out and placed under the dish while it is in use.
- Following development, spray both sides of the wafer with isopropanol and dry with the air gun gently over the wbexfab_solv.
- All spent developer must go in the carboy waste container.
- When you are finished, spray the inside of the dish with isopropanol and dry with the air gun gently over the sink in the wbexfab_solv.

Conclusion

- When using shared lab equipment, make sure the area is clean and free of resist when you are finished.
- Report any problems encountered during your process with lab equipment on Badger.