

Lift-off and Solvent Use

Process:

To clean a sample with common solvents (ex. acetone, isopropanol, methanol). Or consequently use solvents to strip resist in the lift-off process. Lab user would provide the substrate.

Materials:

There are a number of organic solvents that can be used to clean wafer and strip resist. This SOP covers the following: Acetone, Methanol, Isopropanol (IPA), Bakers PRS-3000, 1-methyl-2-pyrrolidinone (NMP), Hexamethyldisiloxane (HMDS), Dimethyl Sulfoxide (DMSO), Methyl iso-butyl ketone (MIBK), Toluene. Please check with staff before bringing in new chemicals into the lab. Lab user would provide wafer or glass samples to be cleaned or stripped of materials.

Incompatible Materials:

Oxidizers, strong acids, and bases. May fog or cause plastics to swell upon contact.

Hazards: Flammables. Many are irritants, skin penetrators, and may cause health issues long-term. Be sure to check MSDS for the exact chemicals you are working with (ex. methanol can blind you).

Exposure Actions: Do what's below, and then notify CNM2 staff within a few hours. For advice, call CNM2 staff.

Eyes: Hold eyes open in running eyewash station for 15 mins and seek medical attention.

Skin: Remove splashed clothing, wash for 15 minutes and seek medical attention

Personal Protective Equipment:

Wear protective eyewear including splash goggles for using baths. Wear double nitrile gloves or use barrier gloves. If the top glove layer becomes contaminated, immediately discard the top glove and wash hands.

Acceptable Locations for Use:

The photolithography area sinks, are the only areas for acceptable use. If using small amounts of acetone, IPA, or methanol, from a squeeze bottle onto a tekwipe, it is ok to use these away from the wetbenches. Lift-off or solvent cleaning baths must be done at the appropriate wet bench work stations.

Additional Process Notes:

Use Teflon or glassware for processing materials. Any deviations from existing processing protocols should be discussed with staff beforehand.

Disposal:

All materials contaminated with solvents should be placed in a zip-lock bag and can be thrown in the regular trash.

Any wafers or glass that has solvents on it should be placed in the sharps container.

Lift-off and cleaning solutions (Acetone, NMP, etc) should be disposed in the "Flammables" bottle and rinse all glassware in the sink with 3 DI water rinses. **MAKE SURE THE FUNNEL IS CLOSED** after pouring solution into the bottle.