

HMDS Adhesion Promoter Deposition Steps



Danger

HMDS: hexamethyldisilazane

Highly flammable liquid and vapor.

Harmful if swallowed or inhaled.

Toxic in contact with skin.

Harmful to aquatic life with long-lasting effects.

HMDS is an adhesion promoter which is used to make photoresist adhere better to common substrates. **ALL HMDS HANDLING MUST HAPPEN INSIDE THE FUME HOOD WITH THE BLOWER ON!** Here is our procedure for depositing HMDS on a chip:

1. Turn on the light inside the specialized HMDS fume hood (room 867) using the switch to the right of the door.
2. Turn on the hot plate inside the fume hood.
3. Set the hot plate to 60C by pressing “ENT,” “plate temp,” “6,” “0,” “ENT.” You’ll have to push the buttons pretty hard because they are old.
4. Wait at least 15 minutes for the hotplate temperature to stabilize. Use this time to do other things.
5. Clean your samples thoroughly with acetone and IPA, then blow dry them with nitrogen. You may wish to use an ultrasonic cleaner if you want to remove all microscopic debris.
6. Put the samples in the plasma cleaner for at least 5 minutes.
7. After removing the samples from the plasma cleaner, place them on one of the glass slides in the glass Petri dish inside the fume hood.
8. Prepare the HMDS. You can pull some directly out of the bottle (located in the solvent cabinet) with a syringe. If there is not enough left, pour some in a vial and label it appropriately.
9. Immediately close all HMDS containers after use. They should remain closed when not in use.
10. Extract a **SMALL** amount of HMDS using a syringe and needle.
11. Put one drop of HMDS on one of the microscope slides inside the Petri dish.
12. Immediately put the lid on the Petri dish.
13. Close the door of the fume hood.
14. Wait 5 minutes. The HMDS will evaporate inside the Petri dish and deposit onto your sample.
15. Open the fume hood door. Try not to open it any more than necessary.
16. Turn off the hotplate.
17. Uncover the Petri dish.
18. Remove your samples.
19. Cover the Petri dish.
20. Close the fume hood door.
21. Turn off the light.