**FORMVAR FILM CASTING**

Procedure for coating grids with formvar



**Protective Equipment**; Safety glasses, Lab coat, gloves and Chemical Fume hood

1) Place grids in a glass vial and cover with acetone. Agitate for several minutes and then decant. Repeat with ethanol . Dry grids by placing glass vial upside down on a filter paper in a petri dish lid.

2) Rinse staining dish with distilled water. Fill to the rim with distilled water. Place on a black table top (or over a black plastic sheet).

3) Remove lid from inner formvar solution jar, replace cap on outer jar.

4) Open vacuum dessicator and remove one slide. Wipe briefly with kimwipe to remove any particles.

5) Dip slide into formvar solution, after 5 seconds smoothly lift the slide until it is just above the solution. Hold in this position for 30 seconds. Let the slide dry within the outer formvar solution jar for 1 to 2 minutes.

6) Using a razor blade, score around the edges of the formvar film on the slide. Breathe across the film and lower the slide into the water at an angle of 30 o - 40o so that the film floats free onto the water surface. The film should have a uniform grey to silver interference color.

7) Place grids onto the formvar. Avoid areas of uneven color.

8) Bend a piece of parafilm into a u-shape. Place it over the film and roll it over the formvar and grids so that they adhere to the parafilm. Place the parafilm flat on a filter paper and let dry in a petri dish.

9) Clean up – empty staining dish and wipe up any spilled water, put garbage into trash can, put lid back on inner formvar jar and outer jar, (in general leave the area better/cleaner than you found it).

Notes:

If the slides or the formvar solution contain any moisture, this will show up in the film you cast as a multitude of holes when you view your samples on the TEM. That is why slides are stored in a dessicater prior to dipping in formvar (the formvar is in a dessicant jar) and why you dry the slide in the dessicant jar after dipping in formvar solution.

Alternate (oven) method for slide drying;

Wipe a microscope slide with a kimwipe and place in 75oC oven. The heat helps remove any moisture on the slide

**Dip Method for Film Casting**; Pour formvar solution into graduated cylinder, grasp slide with clip, smoothly lower into formvar solution, pause for ~ 5 seconds, then smoothly raise your slide just above the solution, wait 30 seconds then raise slide up out of cylinder. Continue on to step 6 above. Remember to clean up; Pour formvar back into storage bottle, tightly cap. Put aluminum over cylendar to keep it dust free.