

Preparation of the PMMA resist solution

Physlab, LUMS 28 June 2016

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Use PMMA (powder – supplied by Sigma Aldrich), High molecular Weight (HMW) 960k MW.

Formulae:

$$\frac{\text{weight}}{\text{weight}} \% = \frac{\text{weight of solute}}{\text{weight of solution}} \times 100$$

Procedure:

1. Rinse all vessels, and toolsetc. in respective solvent before use.
2. Weigh a bottle on the balance and set the reading to zero.
3. Add the required weight of solvent (anisole) to the bottle.
4. Depending the desired percentage, put the corresponding weight of PMMA into anisole to make the solution (PMMA + anisole). For example: If we want to make 5% solution of 1.6 g, we can use these quantities
solution = 1.6 g, anisole = 1.52 g and PMMA=0.08 g.
5. Afterwards, put the magnetic stirrer inside the bottle.
6. Seal the bottle with cork or aluminum foil and place it on the hot plate (set temperature to ~ 75°C).
7. Adjust magnetic stirrer's revolution as 3 krpm.
8. Let the solution to mix/dissolve, with magnetic stirring, for 60 mins on the hotplate.
9. Following these footsteps, any solution with any concentration can be made.
10. It should be noted that for lower molecular weight PMMA (like PMMA 120 K etc), chlorobenzene is used as solvent.