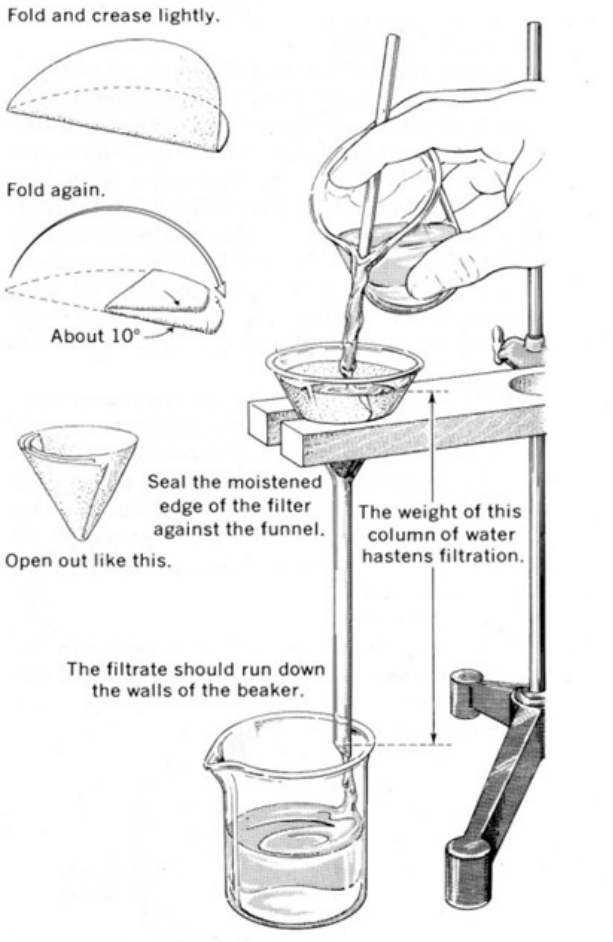
**Filtration a Method for Recovering Precipitates**

Precipitates formed from metathesis reactions can be separated from the solution in which they form using filtration. Here is the ideal method for gravity filtration from the classic Lab Notebook, *Empirical Chemistry* by J.W. Hagen.



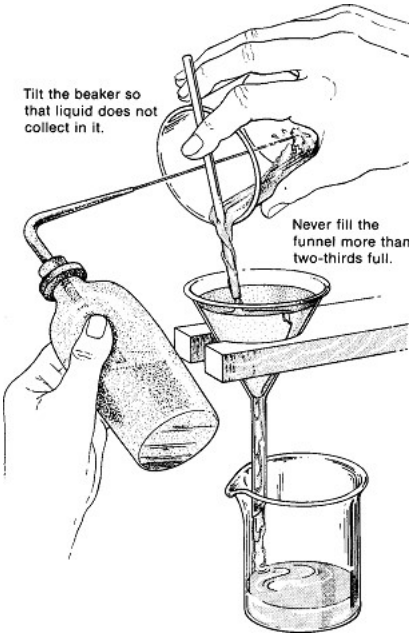

Fold a circle of filter paper in half and then fold again so that the edges do not meet but form an angle of about 10°. This will allow for a better fit to the funnel.

Since you will need to know the mass of the filter paper, accurately weigh the paper on your balance.

After recording the mass, take your folded paper and open the larger half to form a cone, which you will place in the funnel.

Ideally the top of the paper cone should be at least 0.5 cm below the rim of the funnel.

The paper should be firmly in place and moistened with distilled water. With the fingers, press the upper edge of the cone against the funnel to form a seal.




When filtering a precipitate, first decant most of the supernatant solution into the funnel. Then, using a wash bottle with distilled water flush any precipitate remaining in the beaker into the filter. During this process, the liquid level in the funnel should never be filled more than 2/3 full.

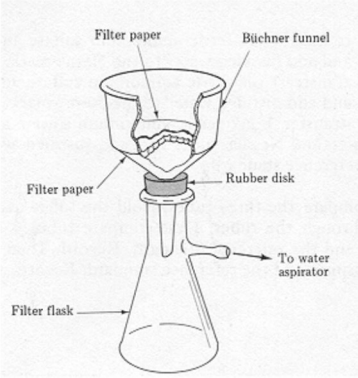
Note the use of the glass stir rod as an aid in pouring the liquid. Water will cling to the rod preventing any splattering.

Important and often part of a FRQ

After filtering, the precipitate is rinsed with distilled water to remove any spectator ions from the solution in the wet precipitate. Several small rinsing operations are more effective than one large volume**.**

**If the precipitate is not properly washed the spectator ions left with the wet precipitate will add to the mass of the precipitate on drying.**

Many colleges now use a vacuum filtration system. This method requires a vacuum source, and a special type of funnel called a Büchner Funnel. This is a flat base funnel with small holes for drainage.




The flat filter paper and the vacuum make for speedy filtration.

However, a vacuum source is needed. Commonly this will be a vacuum line or an aspirator.

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The filter paper and precipitate are then put in a drying oven which will heat the filter paper to evaporate the water. The oven must be warm enough to evaporate the water, but not so hot as to decompose the precipitate or burn the filter paper.

The paper and precipitate is weighed over time.

The sample will continue to drop in weight until all the water has evaporated.