

Lab Technique 16: Filtration by Gravity

Filtration is a physical method of separating a suspended solid from a solution or liquid by passing the solution or liquid through a porous barrier, called a filter.

Set up:

Suspend the funnel over the receiving flask with a ring clamp (use a clay triangle if needed).

Move the receiving flask so that it is touching the tip of the funnel. This will reduce splashing.



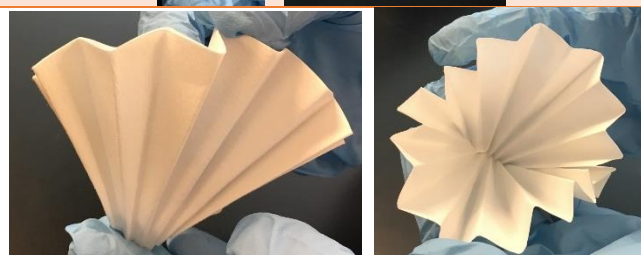
Place the filter paper inside of the funnel.

There are two types of filter paper available for gravity filtration:

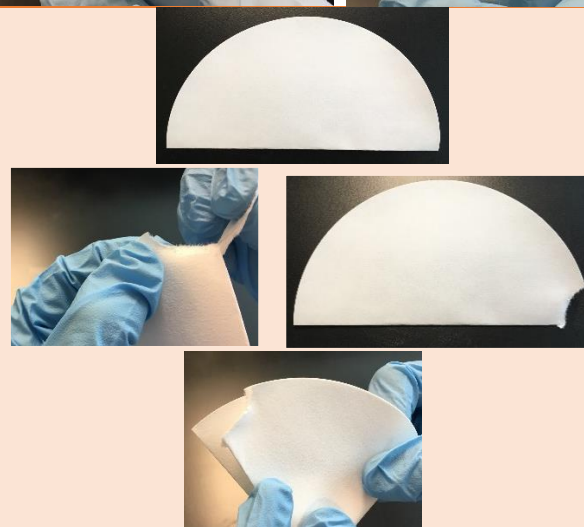
- fluted filter paper (left)
- flat disc (right)



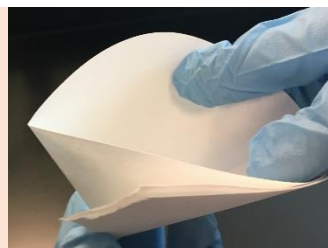
- If using is a fluted filter paper (commercially fan-folded):
 - open it so that the outer folds touch the funnel



- If it is a flat disc:
 - fold the filter paper in half
 - tear off a small portion of one of the outer corners
 - fold it in half again, but not perfectly – there should be a 5° to 10° angle between the edges (the tear and angle allow the filter paper to lie smoother against the funnel)



- open the cone, keeping the two torn portions and the closest un torn portion together



Place the filter paper inside the funnel, and wet it with deionized water so that it stays in place.



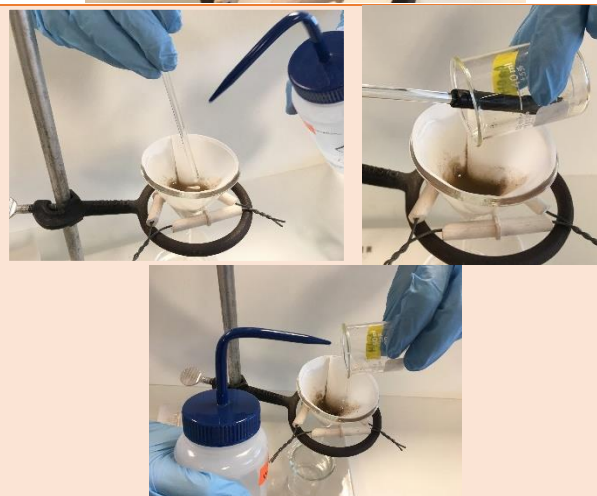
Filtering:

Pour the aqueous portion, called the supernatant, through the filter paper using a glass rod to direct the flow. Make sure the tip of the glass rod touches the side of the funnel. Fill the funnel about 2/3.

Keep pouring liquid before the funnel empties out.



Once transferred, rinse the glass rod over the funnel, and use the rubber policeman to sweep the solid onto the filter paper. You can also use the water bottle to help transfer small solid particles.

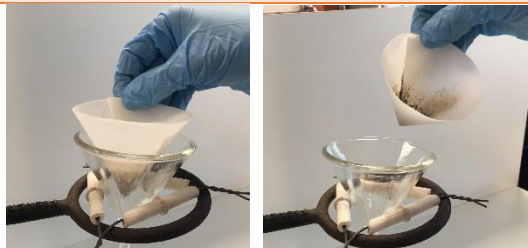


Once the aqueous portion has filtered, rinse the solid with your wash bottle. Allow the liquid to drain. Then rinse one or two more times, allowing the liquid to drain between rinses.



Removing residue and filter paper:

Carefully remove the filter paper from the funnel.



The solid on the filter paper is called the residue. The aqueous portion is now called the filtrate. Follow the experiment's instructions regarding the residue and the filtrate.

