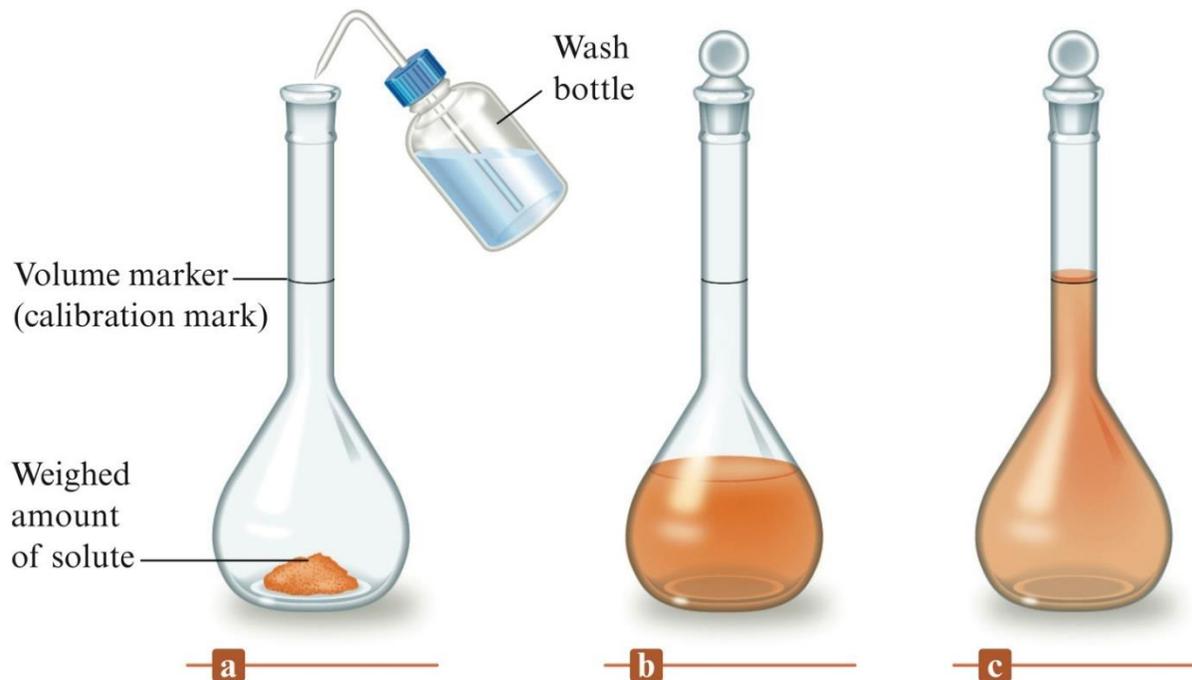


## How to Prepare a Solution



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**Figure 4.10**

Steps involved in the preparation of a standard aqueous solution. (a) Put a weighed amount of a substance (solute) into the volumetric flask, and add a small quantity of water. (b) Dissolve the solid in the water by gently swirling the flask (*with the stopper in place*). (c) Add more water (with gentle swirling) until the level of the solution just reaches the mark etched on the neck of the flask. Then mix the solution thoroughly by inverting the flask several times holding the stopper in place.

## How to Separate a Mixture using Vacuum Filtration

1. Use a clamp to secure a side-arm (filter) flask to a ring stand.
2. Connect the rubber tubing from the aspirator to the side-arm of the flask.
3. Place a Buchner funnel on top of the flask.
4. Place filter paper inside of the Buchner funnel. Add a few drops of the solvent (usually distilled water) to the secure the filter paper in place.
5. Turn on the aspirator.
6. Ensure the funnel has formed a proper seal. It may be necessary to push the funnel down into the flask until it is air tight.
7. Gently stir the mixture to be separated to release any precipitate that may have settled onto the bottom of the container. Slowly pour a small amount of the mixture onto the center of the filter paper. The precipitate will be collected on top of the filter paper.
8. Continue pouring the mixture onto the center of the filter paper. Small increments added to the center will minimize the chances of the mixture from passing around the edges of the filter paper and into the flask.
9. Scrape any remaining solid in the reaction vessel onto the filter paper.
10. Use distilled water

(or appropriate solvent) to wash any remaining solid out of the reaction vessel and off the stirring rod.

11. Rinse the precipitate with distilled water (or appropriate solvent).
12. Continue to run the aspirator to slightly dry the precipitate.
13. Turn off the aspirator.
14. Remove the funnel from the flask.
15. Use a spatula or scoopula to carefully remove the filter paper with the precipitate from the funnel.
16. Place the filter paper in the desired drying apparatus to complete drying.
17. Disconnect the rubber tubing from the side-arm flask.



**Buchner Funnel**

