FLINN SCIENTIFIC

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Supplementary Information

Two of the most basic and important techniques to master in chemical analysis are filtering and decanting. These two techniques of quantitative transfer occur as crucial steps in many analytical determinations. To make sure the filtering speed is as rapid as possible, the filter paper must be seated properly in the funnel. The filter paper should make complete contact with the sides of the funnel and drain with few, if any, air bubbles in the stem. This is done by folding the filter paper as shown in Figure 1 and tearing off the corner. This allows the subsequent cone of filter paper to be placed smoothly against the sides of the funnel. Place the filter paper cone in the funnel. Wet the filter paper thoroughly with distilled or deionized water and use your fingers to smooth the paper against the sides of the funnel until no air bubbles are visible in the stem.

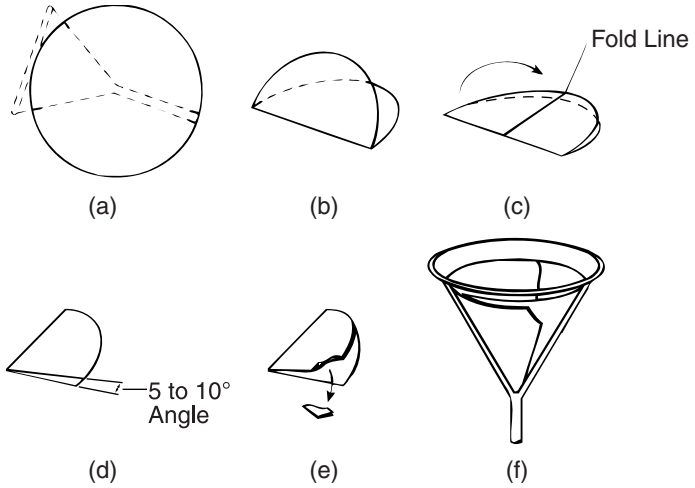

Figure 1.

Proper decanting technique ensures that the precipitate is transferred from the beaker to the filter paper and little, if any, is lost during the transfer. Start by holding a stir rod against the lip of the beaker and pour the liquid from the beaker into the funnel. The liquid should run down the rod and into the funnel without splashing (Figure 2). Keep the level of the liquid in the funnel below the top of the filter paper.

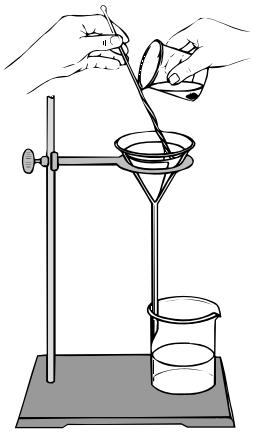

Figure 2.

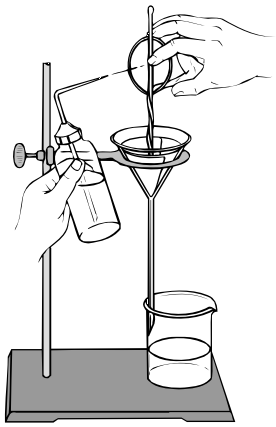

Figure 3.

When all the liquid has been transferred to the funnel, begin transferring the remaining precipitate from the beaker to the funnel. Add a stream of distilled or deionized water to the beaker. Use a rubber policeman on the end of the stir rod to loosen any precipitate clinging to the beaker. Rinse the rubber policeman with a stream of distilled or deionized water, swirl the beaker to suspend the precipitate, and transfer the suspension to the funnel using the technique outlined in Figure 2. Repeat this rinsing until nearly all the precipitate has been transferred. Rinse the beaker again and transfer the liquid to the flask. Hold the beaker and stir rod as shown in Figure 3 and rinse the sides and bottom of the flask with distilled or deionized water. Rinse at a rate that allows the liquid to flow down the stir rod into the funnel without splashing and doesn't allow the liquid level to rise above the top of the filter paper. Repeat this rinse until no precipitate is visible in the beaker.