

Volumetric Flasks

MCTC Chemistry

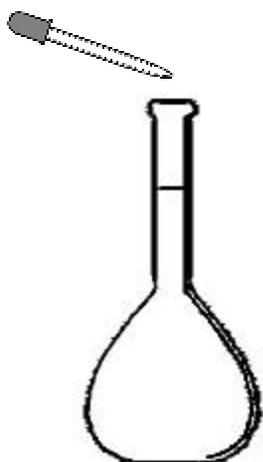
Volumetric flasks are used to create solutions and to dilute solutions more precisely than would be possible with graduated cylinders. Like a volumetric pipette, the volumetric flask is capable of delivering only one volume. The fill mark is located on the neck of the flask to make it possible to accurately and precisely adjust the volume of liquid.

Filling Procedure

Solutions are prepared by first depositing the solute in the volumetric flask. If the solute is a solid, first insert a long stem funnel into the flask. Pour small amounts of the solid into the funnel and if the funnel becomes plugged, simply rinse the solid through with a small amount of solvent (e.g. water).

Liquid solutes, most often dispensed with a volumetric pipette, are added to the volumetric flask in the same way using a funnel to direct the substance to the bottom of the flask.

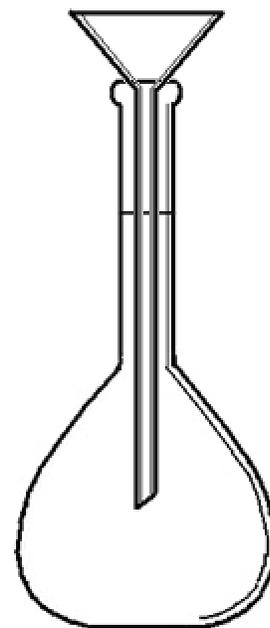
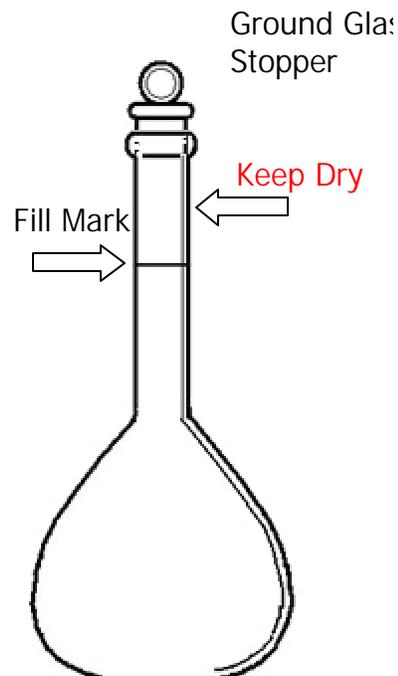
Again, using the funnel, add additional solvent (e.g. water). The funnel keeps solvent droplets from being deposited on the inside surfaces of the neck above the fill mark. Droplets stuck above the fill mark will add to the solution's volume making it greater than it should be.



Remove the funnel carefully to keep the flask's inner neck dry. *Continue filling the flask with solvent using an eyedropper* (figure at left). When properly filled, the meniscus should appear to rest on top of the etched fill mark.



Mix the solute and solvent (water) by placing the ground glass stopper in the top of the volumetric flask. Be sure to remove the small piece of paper that was wrapped around the stopper during storage.



Place one hand at the top of the flask and hold the stopper in place either using your thumb or two fingers. The other hand should be positioned at the bottom of the flask. Turn the flask upside down and let the movement of the air bubble mix the solution. Repeat this process at least 20 times or until the solid (if that was your solute) has completely dissolved.