Volumetric Pipette
MCTC Chemistry

The volumetric pipette is a device that is capable of delivering only one volume of liquid. This is unlike a graduated cylinder or buret that can deliver a broad range of volumes as they have graduated scales. The real advantage of the volumetric pipette is that it delivers its one volume very accurately, precisely and reproducibly. For example, a 10 mL volumetric pipette will deliver 10.00 mL +/- 0.02 mL, over and over again.

The volumetric pipette resembles a drinking straw; however you should NEVER place a pipette in your mouth or use mouth suction to fill it. The pipette is made of glass and has a pointed end like an eyedropper, an enlarged mid-section that is filled with liquid and an upper tube with a Fill Line.

Before proceeding, inspect the pipette for cracks and chips. Any damaged pipette should not be used but instead returned to the instructor.

A pipette helper is used to fill and empty the volumetric pipette (see figure at right). Begin by pushing the non-pointed end of the pipette into the tapered hole at the bottom of the pipette helper. Excessive force is not needed. When pushed snuggly into the pipette helper, the pipette will be in no danger of falling out.

Filling the pipette

- Squeeze out the air in the pipette helper bulb. Newer pipette helpers have a large lever that is pushed to squeeze the suction bulb inside the apparatus.
- Position one hand on the pipette helper with the thumb on the fill/empty lever.
- Use the other hand to hold the lower container (beaker) and to stabilize the lower end of the pipette.
- Position the pipette’s tip a little bit off the bottom of the container.
- Push the Fill/Empty lever up to fill the pipette.
- Control the speed of the filling operation by adjusting how far you push the Fill/Empty lever.
- Stop filling when the meniscus is resting on top of the Fill Line. It may be necessary to fill and/or empty the pipette by pressing the Fill/Empty lever up or down to properly position the meniscus.

Note: Always keep the tip of the pipette immersed in liquid when filling to avoid drawing air into the pipette helper.

Note: Never point a filled pipette upward or lay a filled pipette down on the bench-top as liquid may reach the pipette helper and plug it.

Note: Never draw liquid into the pipette helper. If you do, please alert the instructor immediately.

Emptying the pipette

- Position the filled pipette over the appropriate container.
- Press the Fill/Empty lever downwards until the pipette is empty.
- Touch the tip of the pipette to the wall of the container to remove the drop that may be clinging to the tip.
- A small amount of liquid will remain in the tip of the pipette. LEAVE IT THERE as the pipette was calibrated in this fashion.

When finished with your pipette, be sure to place it in the dirty pipette holder/basket pointing upward. This will keep the fragile tip from being damaged.