

Volumetric Glassware Use – The Buret

The Buret

Burets can be used to measure volumes up to 50 mL with both precision and accuracy (see figure 1). Because they are calibrated to the tenth of one mL, volumes can be recorded to the hundredth decimal place. The volume dispensed by a buret is determined by measuring the level of solution in the buret at the beginning of the experiment (the initial reading) and again after the appropriate amount of solution has been dispensed (the final reading). The difference between these two readings corresponds to the volume actually dispensed.

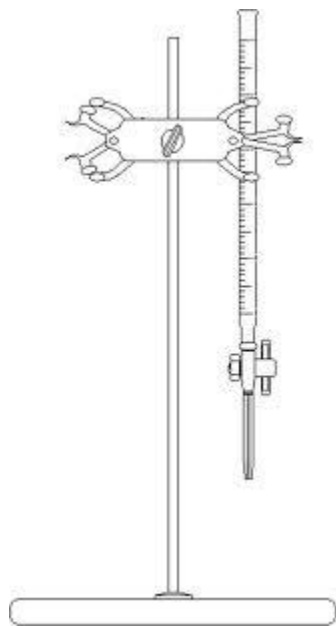


Figure1: A buret in a a stand.

Filling a buret

Once the buret is cleaned, place it in a buret stand and rinse it with distilled water (be sure the water runs through the tip as well). Close the stopcock. Condition the buret by rinsing with the solution to be used. Pour a 5 mL portion from a beaker or flask, not a large reagent bottle, through a funnel into the buret. Tilt the buret horizontally, rocking and rotating it until all its walls have been washed. Do not use your finger to cover the open end of the buret! Turn the buret upright and drain the solution through the tip. Repeat this twice; then fill the buret with solution, above the 0 mL mark.

Finally, open the stopcock and allow the solution to flow until there are no bubbles remaining in the tip. If the level of the solution is far below the 0 mL mark you should add more solution. (Note: It is not necessary to have the level at an exact volume such as 0.00 or 1.00) Make sure to remove the funnel after filling the buret. This is because drops of solution may fall from it into the buret after you have taken an initial reading.

Reading a Buret

When reading a buret, remember to read it against a uniform background and to have the meniscus at eye-level. Also be sure to include uncertainty in any buret reading. Always record buret readings to two decimal places. If the bottom of the meniscus is at the 7.00 mL mark, record it as 7.00 mL not 7 mL.

Dispensing a Solution

When a solution is being dispensed from a buret grasp the stopcock in a manner that gives you control over the stopcock. In any case, you want the grip to be as comfortable as possible. It will be necessary to dispense liquids a drop or two at a time. It is possible to adjust the stopcock to allow a flow rate of 1 drop every second. Also if you rapidly turn the stopcock through 180°, the volume dispensed can be as little as 0.02 mL.

Keep the receiving vessel near enough to the buret tip so that solution does not splatter. However, do not insert the tip directly into the solution in the receiving vessel.