Using Burettes

Posted by Anonymous on Fri, 2014-11-28 11:55

Using Burettes: Could you provide information for washing burettes correctly. I find students have no idea.

Voting:

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Year Level:
Senior Secondary
Laboratory Technicians:
Laboratory Technicians

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Answer by ritasteffe on question Using Burettes

Submitted by on 08 December 2014

Answer reviewed 27 February 2023

Good laboratory technique requires glassware that is clean both physically and chemically. The accuracy of volumetric glassware depends on many factors, one of these is ensuring that the glassware is clean. A burette is used to deliver variable volumes of solution precisely and accurately, particularly for titrations. A clean burette is important for several reasons.

1. The presence of small amounts of impurities may distort the meniscus making correct adjustment impossible.
2. You do not want any previous reagents to react with your solutions and change analysis results.
3. Volume errors.

General Cleaning Procedure for Burettes

- Immediately after use, make sure the stopcock is closed (i.e., at right angles to the burette).
- Add about 10–15 mL of tap water with the aid of a funnel.
- Hold the burette almost horizontally and rotate it so that all the inner surface of the burette is rinsed.
- Open the stopcock and allow the water to run out the tip.
- Repeat once more for tap water then twice with distilled water.
- The standard test to determine if a burette is clean is that the distilled water drains from the inside surface uniformly in a smooth sheet without the formation of droplets. If droplets remain on the glass surface it may be necessary to clean with detergent or specific glass cleaning solutions to remove greasy films which develop over time. Grease and other contaminating materials will prevent the glass from becoming uniformly wetted and alter the volume of liquid delivered.

It is imperative to remove all traces of detergent or glass cleaning solutions, so attention to thorough rinsing is advised. Tap and distilled water should be allowed to run through the burette. A long-handled burette brush can also be used to clean a burette, but be careful you do not scratch the interior surface.

- When clean, clamp the burette in an inverted position with the stopcock open to dry.
- Always cover burettes when not in use.
- Always rinse the burette before use at least twice with titrant solution and make sure there are no air bubbles present in the tip. This ensures that no excess water will dilute the solution to be measured.

Other things to consider include cleaning and lubricating the stop cock and removing any blockages from the tip. It should be noted the same procedure can be used with plastic burettes, however, special care should be taken not to use anything that will scratch or react with the plastic. Some laboratories have specially designed long sinks and there are commercially available soaking jars for cleaning burettes. It must be noted that a burette is a fragile, expensive piece of laboratory glassware and great care must be taken when handling and cleaning so as not to break either end, in particular the tip or the stopcock. Here is a link to a document from Corning on the ‘Care and Safe Handling of Laboratory Glassware’, which has information on cleaning and storing glassware, including burettes.
https://www.corning.com/worldwide/en/products/life-sciences/products/gla...

References

Corning Inc. (1994 – 2023). *Life Sciences, Laboratory Glassware.* Retrieved from Corning Inc: https://www.corning.com/worldwide/en/products/life-sciences/products/gla...
