

## PROPER USE OF DEIONIZED WATER IN THE LABORATORY

Deionized water is provided in the laboratory for three purposes:

1. **For quantitative dilutions of samples being analyzed in quantitative and qualitative analysis.**
2. **For preparation of reagent solutions from more concentrated stock, and**
3. **For final rinsing of glassware to remove trace impurities present in the tap water used for primary washing.**

Each student is provided with a plastic squeeze-type squirting was bottle of approximately 250 – 500 mL capacity, and the student is to fill this bottle as needed from the classroom supply bottle of deionized water.

The wash bottle should be put away into the lab drawer along with other glassware. Do not empty the wash bottle at the end of each lab session; yesterday's deionized water is perfectly O.K. to use.

Small quantitative dilutions are made directly from the wash bottle; in unusual cases a large dilution could be made mostly from the supply water, finishing to the end point of volume with the squeeze bottle.

When washing glassware or other vessels, tap water and laboratory soap or detergent is used with sponge, bottle brush or other tool until the vessel is clean. The vessel is then rinsed with tap water until all traces of detergent are gone.

The **final rinse** with deionized water is done as follows:

- Place a **small amount of deionized water** in the vessel from the wash bottle,
- Swirl and rinse water around, to coat all interior surfaces,
- Pour the water out.
- Repeat this once or twice and all the impurities in the tap water should be gone.

If the vessel is to be dried, do this by allowing it to drain.

Do not use a towel to dry the vessel since this will of course contaminate the vessel again.

Using large amounts of deionized water is unnecessary and wasteful. For example, to rinse a 250 mL beaker, two rinses of 10 mL deionized water each would be adequate. Deionized water should never be used for primary washing of glassware; copious and Wasteful use of deionized water (or any other reagents) is a poor laboratory technique condemned equally in schools and industrial laboratories.