

Preparation of Standard Solutions General Procedure

1. Always use acid-washed class 'A' volumetric glassware and certified autopipettors
Available sizes are: autopipettors 0.5-10, 20-100, 100-1000, 1000-5000 μ L;
 glass pipets- 1,2,3,4,5,10,15,20,25,40, and 50 mL;
 flasks – 10, 25, 50, 100, 250, 500, and 1000 mL.
2. Make large volumes as there is less margin for error.
3. Pre-rinse flasks ≥ 3 x's with nanopure water.
4. Add nanopure water to flask first (usually about 2/3 full). Keep stoppers on flasks except when adding solutions. Never lay stoppers on table.
5. Pour stock solution into beaker before pipetting. Never put pipets into stock reagent bottles.
6. Pre-rinse pipets or pipet tips at least 2 times with stock solution to be pipetted.
7. Pipet exactly the appropriate amount into flask. Do not blow out volumetric pipets. Touch end of pipet to glass when delivery is complete. If using autopipettor, tip should be rinsed with working solution 1 or 2 times to make sure all stock is delivered.
8. Add nanopure water until line is even with bottom of meniscus. Fill exactly to line using a pasteur pipet or rinse bottle.
10. Mix thoroughly.
11. Use the amounts of standard stock solution and nanopure water suggested in the methods book for the procedure you are doing. Otherwise, use the following formula to obtain the correct dilution:

$$\text{mL standard stock} = \frac{\text{desired conc.} \times \text{total final volume}}{\text{conc. of stock standard}}$$

Also, see standard preparation table.