

Preparation of measuring reagents

A solution of a volumetric reagent can be prepared at the exact concentration either by weighing the substance accurately, dissolving it and adding water to the line in a volumetric flask, provided the substance is stable, standard and chemically pure. A more common method of preparation is to prepare a volumetric solution of approximate concentration and titrate it with an exact volume of standard solution of the exact concentration that the volumetric solution should have - called **standardisation of titration solutions**. This procedure determines the **titration factor f** of the volumetric reagent as the ratio of the volume of the theoretical consumption of the volumetric solution in ml to the actual consumption of the volumetric solution in ml. The titration factor is then used to adjust (multiply) the concentration of the titration reagent when calculating the concentrations of substances from the titration determination.

$f = \text{volume of theoretical consumption of the measured solution (ml)} / \text{volume of real consumption of the measured solution (ml)}$

If the solution is of the exact concentration, **$f = 1$** .

If the solution is more dilute, f is **less than 1**.

If the solution is more concentrated, f is **greater than 1**.

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