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"Education through self-help is our motto"-Karmaveer

Rayat Shikshan Sanstha's,

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Tal.-Shahuwadi, Dist.-Kolhapur- 415101

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Dr.Anil Ubale Dr.Sidram Khot

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Keywords: volumetric analysis, micro scale technique, cost, time, energy, pollution, economy.

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So it is necessary to use alternative technique in which the laboratory chemicals be used at a minimal level without affecting the skill and understanding of a student performing the practical. The conventional methods use large scale quantities for the experiments. This seems to be out of date in the present time and needs a drastic revision. Some institutions in U. S. A have taken cognizance of this situation. A few books have appeared in the market which have suggested the experiments on smaller scale of apparatus and chemicals. But nothing much appears to have been done in our education system.

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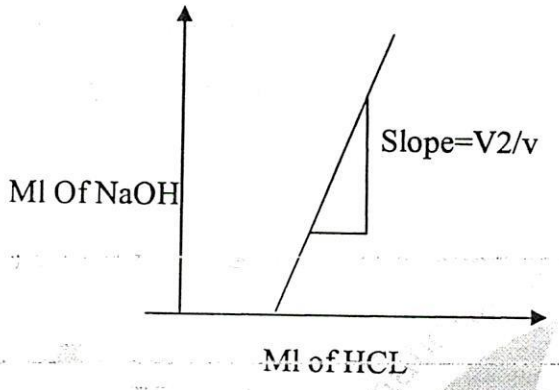
HCL NaOH

$N_1V_1 = N_2V_2$ OR $V_2/V_1=N_1/N_2$

since V2/v is known by graph ,N can be found out, the result obtained by Graphical method is much more accurate than the result obtained by calculation.



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Further, if we want to reduce the volume of solution used for the titration. We can use a mcroburette and take an interval of 0.5 ml or less instead of 1.0 ml for pilot reading. For the exact reading, we add the titrant solution drop by drop till we get the end point.

This method can be applied to all acid base titrations with conventional indicators like phenolphthalein, methyl orange and bromothymol blue. This method can also be applied for redox titrations, iodometric titrations and other titrations where regeneration of indicator is possible.

It is know that, when we reduce the normality of the solution, the pH range in which the indicator shows the colour change is reduced, there creating a cause of error However, when we reduce the normality from 1 N to 0.1 N, the titration error is only 00.2 per cent and when we reduce the normality from 0.1 to 0.01 N, the titration error is only about 1 to 2 per cent, Similarly, when we reduce the volume of solution taken for titration to less than ml, we create a cause of error in the result. However, the percentage error is much less. These errors are within the practical limits at students level, So looking at the advantages, the method can be recommended at school and college level.

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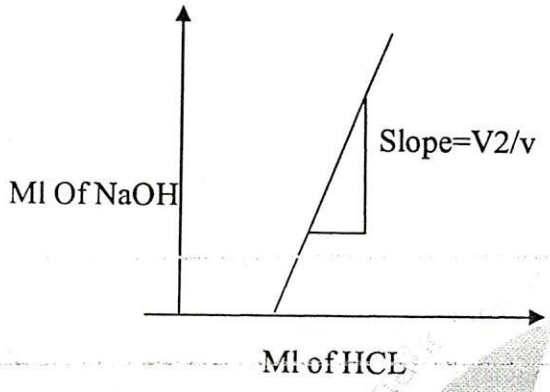

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