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Aim:

Determination of % of Purity of borax.

Reference:

Anees A Siddiqui, LAB Manual Selected Experiments of Pharmaceutical Analysis, CBS Publishers and Distributors PVT. Ltd., Page no - 17 to 18.

Requirement:

Apparatus :- Beaker, Glass rod, funnel, Burette, Conical flask, Measuring cylinder, Spatula, Weight Machine.

Chemical :- 0.5 M HCl,
Methyl Red (indicator)
Borax.

Theory :-

Borax, also known as sodium borate, sodium tetraborate or disodium tetraborate, is an important boron compound. It is a salt of boric acid. It is usually a white powder consisting of soft colorless crystals that dissolve easily in water.

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S.N.	Starting point	End point	Vol. consumed
1.	0	2.2	2.2
2.	2.2	5	2.8
3.	5	9.5	4.5

$$\text{Average} = \frac{2.2 + 2.8 + 4.5}{3} = \frac{7.5}{3} = 3.16.$$

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Borax has a wide variety of uses. It is a component of many ~~ingredients~~ detergents, cosmetics, and enamel glazes. It is also used to make buffer solutions in biochemistry, as a fire retardant, as an anti-fungal compound for fiberglass, as an insecticide, as a flux in metallurgy, and as a precursor for other boron compounds.

Procedure :-

i) Wash and dry each glassware before proceeding the experiment:

ii) For standard Solution (HCl)

→ Take 22.5 ml of HCl in 100 ml of water then make up the volume upto 500 ml.

→ Then take 50 ml of standard solution in burette.

iii) For sample solution (Borax).

→ Weight accurately 1 gm of borax and dissolve it in 30 ml of water.

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iv) Take 10 ml of sample solution in conical flask and add 2-3 drops of methyl red indicator and titrate it against standard solution (HCl).

Result:

The percentage purity of the sample was found to be ----.

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