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Inorganic Chemistry

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TOPIC:- VOLUMETRIC FLASK

VOLUMETRIC FLASK

Volumetric flask is a type of flask used in laboratory for preparing standard solutions. These flasks are also known as measuring flasks or graduated flasks. These flasks are made up of glass and are pear shaped with a long neck and flat bottom as shown in Figure 3.The size of the flask that we generally use in laboratories are 10 mL ,25 mL, 50 mL, 100 mL, 250 mL, 500 mL, 1000 mL and 2000 mL. In each volumetric flask, there is a mark on the neck which indicates the volume. For example if we are using 25 mL volumetric flask, then the mark on the neck of the flask indicates the volume i.e. 25 mL.Let us discuss, how these volumetric flask are used for preparing solutions of desired volume:

- Suppose we have to prepare 1/10 N oxalic acid solution having volume 250 mL. For this first of all the mass of the oxalic acid is calculated using formula w = NEV/1000, Where N is normality

of the solution, E is equivalent weight and V is volume of the solution. The mass calculated using the above formula for making 1/10 N oxalic acid solution 250 ml is 1.57 g. Now weigh 1.57 g oxalic acid using an analytical balance. The detail of analytical balance is given in the next section.

- Clean the volumetric flask as required; in this case it is 250 ml with distilled water. Now transfer the above weighted oxalic acid into the volumetric flask using a funnel. During the transfer of the acid, some acid get adhere to the inner wall of the flask.
- Now distilled water is added into the volumetric flask in such a way that the acid attached to the inner walls flow down with the water and volumetric flask is half filled. Now cover the flask using a cap and shake it so that oxalic acid may dissolve.

When the acid gets completely dissolved, again fill the volumetric flask with additional distilled water up to the mark very carefully. If the water crosses the mark then there will be change in the

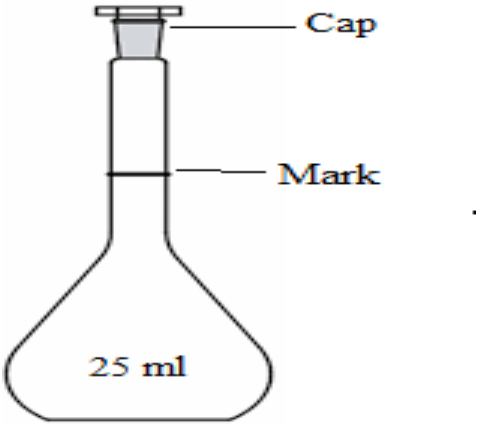

Figure 3. Volumetric flask

volume of the solution or simply we can say that solution prepared is not correct. Therefore attention is to be taken while adding distilled water. We will observe the formation of meniscus in the neck of the volumetric flask. Meniscus is a curve formed in the container in the upper surface of a liquid. The prepared solution is 1/10 N oxalic acid solution.