TDC Part III

Practical (Lab Work)

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TOPIC:- Commonly used glasswares

Glassware for qualitative use

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Glassware for qualitative use

A. Beakers

I. Beakers are cylindrical in shape and may or may not have a volume mark (Figure 1.8). They are available in the range from minimum 5-10 mL to 4-5 L. These are used to hold solid and liquid both. In lab, beakers are used to hold solvents for heating, carrying and storing. Their graduations are approximate, but very useful when exact volumes are not needed.

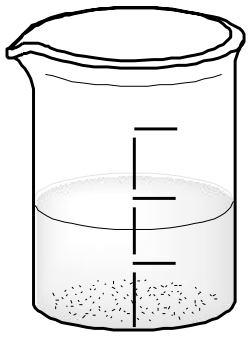


Figure 1.8 Beaker

B. Flasks

I. Flasks are designed so that the contents can be swirled without spilling. They are also easily fitted with stoppers and often have the stopper size written directly on the flask.

II. Erlenmeyer Flask

The most common of all flasks is the Erlenmeyer flask (Figure 1.9). This flask is having a wide base, narrow neck, and conical form, convenient in laboratory experimentation for swirling liquids by hand. The flat bottom allows the Erlenmeyer flask to be directly heated and used in simple reflux (boiling) and condensation procedures.

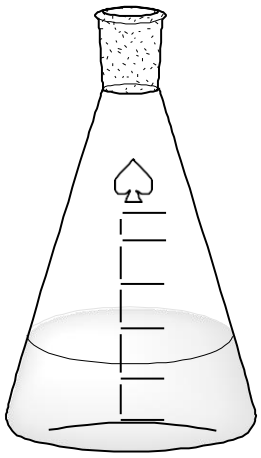


Figure 1.9 Erlenmeyer flask

III. Florence flask

The florence flask is a hybrid between the round bottom and the Erlenmeyer flask and ranges from a few hundred milliliters to a few liters in size (Figure 1.10). Florence flasks can have either a flat bottom or a round bottom. So, applications vary from direct heating to using a heating mantle. It does not have a ground glass joint, so a stopper is used to seal the container. The rounded shape is better for applications that involve boiling.

Figure 1.10 Florence flask

c. **Test tubes**

Test tubes are relatively small cylindrical vessels used to store, heat, and mix chemicals (Figure 1.11). While the test tube comes in specific sizes, it's typically used in qualitative observational procedures.

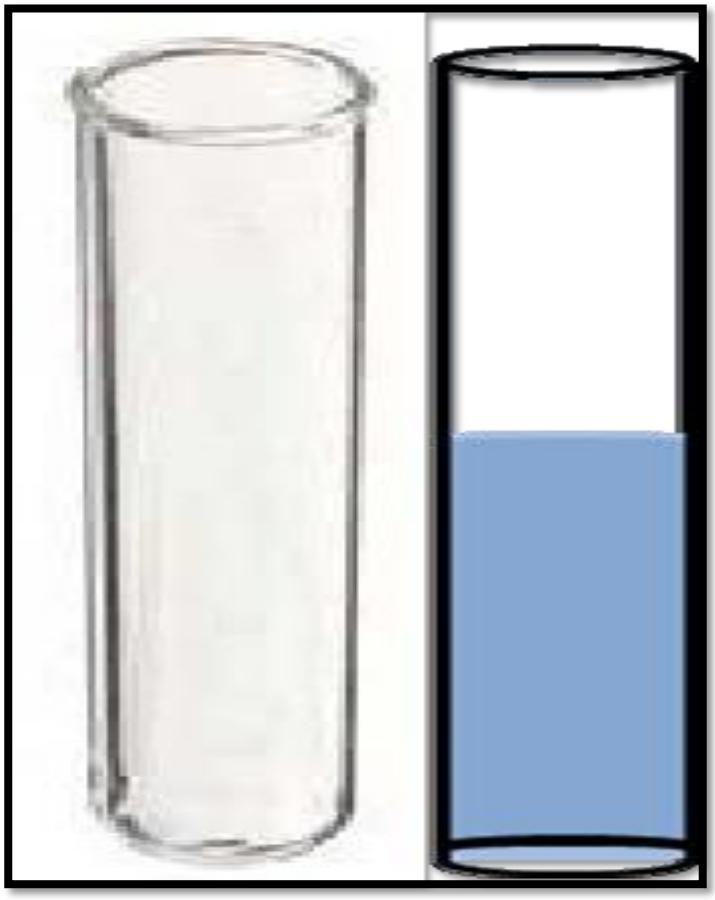
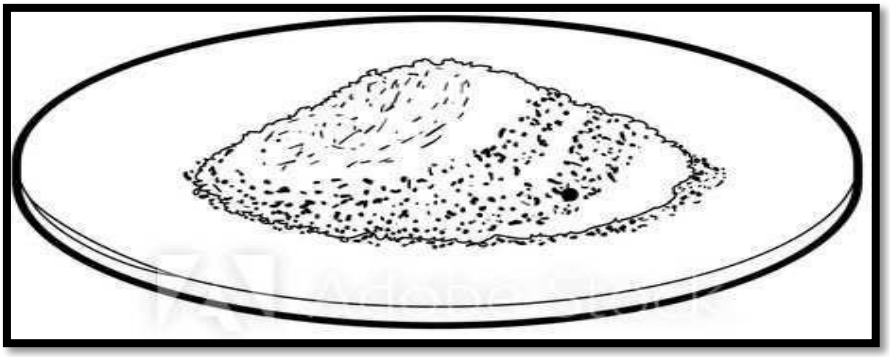


Figure 1.11 Test tube

D. Watch glass

The watch glass is used when a high surface area is needed for a small volume of liquid (Figure 1.12). This is common for crystallization and evaporation, as well as other qualitative procedures. Watch glasses can also be used as cover for beakers, but not flasks.

Figure 1.12 Watch glass



E. Crystallization dish

The crystallization dish is a hybrid between a watch glass and the Petri dish (common in biological procedures) (Figure 1.13). It has a low height-to-width ratio, which means the sides are very low compared to the width of the vessel. This allows high surface area for evaporation, but the crystallization dish is more commonly used as a short-term container for liquids in a variety of bath processes (water, acid, or oil).

Figure 1.13 Crystallization dish