



**The Islamic  
University - College  
of Pharmacy**

# **Laboratory tools**

**By**  
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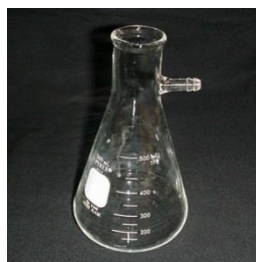
**1-Beakers** :are useful as a reaction container or to hold liquid or solid samples. They are also used to catch liquids from titrations used as distillation receiving container.



**2-Volumetric Flasks** : are used to measure precise volume of liquid or to make precise dilutions.



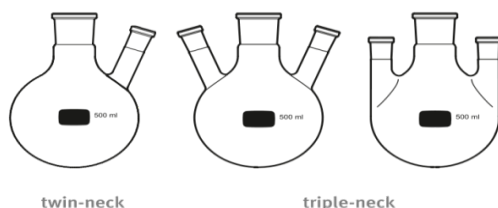
**3- Erlenmeyer Flasks (conical flask):** are useful to contain reactions or to hold liquid samples. They are also useful to catch filtrates.



**4-Vacuum Flask (side-arm flask and filtering flask):** A type of glass flask used in a [laboratory](#) similar to an [Erlenmeyer flask](#), but with short arm coming of it used for connect the flask to a vacuum source. The Vacuum Flask is hold a reduced pressure .note the heavy the walls of this flask they are designed to withstand reduced pressure without imploding this design feature is the reason for the high cost of this flask



**5- Round bottom flask:** Used for distillation or heating of liquid, allows uniform heating.



**6-Round-bottomed flask quick fit one, two and three nick :** used for the chemical reactions with different size the tow and three nick used for inserting thermometer or the condenser reaction or adition of materiales.



**7-Thermometer** :Used for measuring temperature.



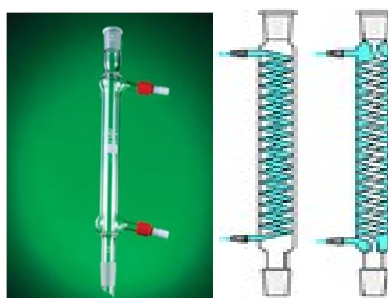
**8-Droppers:** are for addition of liquids drop by drop.



**9-Pipets:** are used to dispense small quantities of liquids



**10-Pipette bulb** :Used along with pipette to suck liquid .



**11- Condenser** :Used for condensing volatile liquid during distillation



**12-Fractional column** :it is a long tube with big surface area filled with glass beads used to do multiple times of evaporation and condensation in one time and this decrease number of distillation operation to separate two or more liquid in high purity.



**13-Receiving adapter** :Used to connect condenser with receiving flask in the distillation system.



**14- Distil head:**Used for connecting distillation flask with condenser and thermometer in the distillation system.



**15-Funnel:** Used for liquid transfer. Also for simple filtration.



**16- Buchner funnel:** Used for vacuum filtration using filter paper.



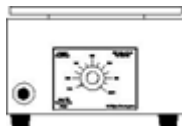
**17-Separatory funnel:** Used for Liquid-Liquid extracts, designed for increase separation efficiency.



**18-Graduated Cylinders :** Used for measuring liquid with better accuracy than beaker.



**19- Bunsen burner :**Used and heat source.



**20-Hot Plates:** can also be used as sources of heat when an open flame is not desirable.



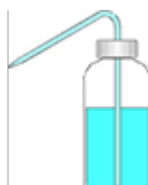
**21- Test Tubes :** are for holding small samples or for containing.



**22-Test tube holders :** are for holding test tubes when tubes should not be touched.



**23-Tongs:** are similar in function to forceps but are useful for larger items.



**24-Wash bottle** :is used for dispensing small quantities of distilled water.



**25-Watch glasses:** are for holding small samples or for covering beakers or evaporation dishes.



**26-Stand** : Used commonly as base for holding distillation system andburette along with clamp and boss head.



**27-Clamp:** Used for holding glassware along with stand and boss head



**28-Ring stand with Rings :**are for holding pieces of glassware in place.



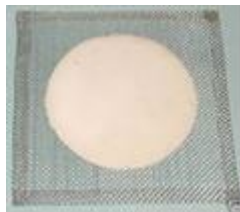
**29-Filter paper:** Used for filtration, available with different pore size.



**30-Mortar and Pestle :**Used for graining materials which have large particle size to small.



**31-Crucible:** Used for burn sample at high temperature.



**32-Wire gauze:** Used for spread the head of burner homogeneously



**33-Spatula:** used for weighting of the chemicals and to take and handle small quantities of solid chemicals.

