



Practical General Chemistry

Lecture notes

Presented by

Lec. Rusl Mahdi Obaid

Medical laboratory Techniques Department

Al-Mustaqbal University College,

Babil, Iraq

First year students

Second Lecture: Glassware


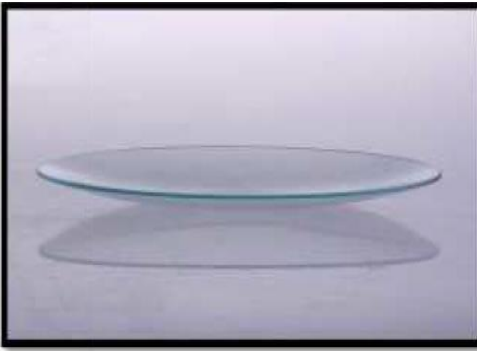





GLASSWARE

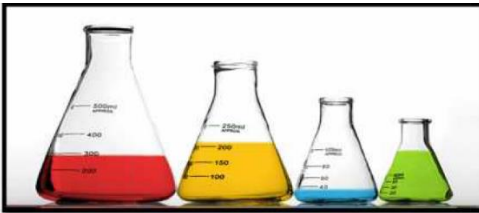


Laboratory Glassware represent many of equipment, which used for scientific experiments in chemistry or biology labs.




They are made of glass and found in many sizes and shapes.




The equipment that important in chemistry lab are:


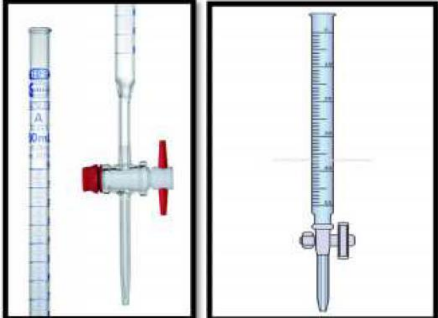
	Name of the tools	Used for	The shape of it
1	Graduated Cylinder	<ul style="list-style-type: none">•For rapid Measurement Of liquid volume.•They are generally, more accurate and precise for this purpose than flasks.	
2	Watch Glass	<ul style="list-style-type: none">•A watch glass is used to hold a small amount of solid, such as the product of a reaction.•Can also be used as a cover for an evaporating dish or beaker.	




<p>3</p>	<p>Beaker</p>	<ul style="list-style-type: none"> •cylindrical container, usually with a pouring lip, to measure, mix, and heating liquids. •Not used for accurate measurement. 	
<p>4</p>	<p>Beaker tong</p>	<ul style="list-style-type: none"> •Tong used to carry a beaker after heating or cooling. 	
<p>5</p>	<p>Volumetric Flask</p>	<ul style="list-style-type: none"> • Flat bottomed bulb with a long neck, usually fitted with a stopper. • Used to prepare precise standard solutions. •They are only good for 1 specific volume. 	




<p>6</p>	<p>Conical Flask</p>	<ul style="list-style-type: none"> • Cylindrical container. Used to contain reactions or to hold liquids samples, or used to catch filtrates. 	
<p>7</p>	<p>Funnel</p>	<ul style="list-style-type: none"> • Used for funneling liquids from one container to another or for filtering when equipped with filter paper. 	
<p>8</p>	<p>Spatula</p>	<ul style="list-style-type: none"> • Used for transfer small quantities of solid chemicals (usually in powdered or crystal form). 	




<p>9</p>	<p>Filter Paper</p>	<ul style="list-style-type: none"> • A semi-permeable paper barrier placed perpendicular to a liquid. • Used to separate fine solids from liquids. 	
<p>10</p>	<p>Test Tube</p>	<ul style="list-style-type: none"> • Common piece of glassware. Used for holding small quantities of samples or for containing reactions. 	
<p>11</p>	<p>Test Tube Holder</p>	<ul style="list-style-type: none"> • A gripping device used to hold a test tube after heating or cooling. 	


<p>12</p>	<p>Test Tube Rack</p>	<ul style="list-style-type: none"> • Used to hold/support test tubes containing chemicals through experiments. 	
<p>13</p>	<p>Pipette</p>	<ul style="list-style-type: none"> • Used to transfer small quantities of liquids. 	
<p>14</p>	<p>Thermometer</p>	<ul style="list-style-type: none"> • Device used to measure the temperature of a substance. 	

<p>15</p>	<p>Stirrer</p>	<ul style="list-style-type: none"> • A piece of glassware used to mix chemicals and liquids for lab purposes. 	
<p>16</p>	<p>Burette</p>	<ul style="list-style-type: none"> • A vertical cylindrical piece of lab with volumetric graduation on its full length and a precision tap in the bottom. • Used to fill with known amounts of a liquid in experiments for which precision is necessary (e.g., a titration experiment). 	

<p>17</p>	<p>Washing bottle</p>	<ul style="list-style-type: none"> • A wash bottle has a spout that delivers a wash solution to a specific area. • Distilled water is the only liquid that should be used in a wash bottle. 	
<p>18</p>	<p>Test tube brush</p>	<ul style="list-style-type: none"> • Used to clean the inside of a test tube (or other long – necked glassware). 	
<p>19</p>	<p>Dropper</p>	<p>Usually, glass tubes tapered to a narrow point, and fitted with a rubber bulb at the top.</p> <ul style="list-style-type: none"> • Used to transfer small quantities of liquids (drops). 	

<p>20</p>	<p>Retort Stand</p>	<ul style="list-style-type: none"> • A piece of scientific equipment, to which clamps can be attached to hold test tubes and another equipment (such as burette). 	
<p>21</p>	<p>Crucible</p>	<ul style="list-style-type: none"> • Used for heating substances. • Can withstand high direct heat 	
<p>22</p>	<p>Balance</p>	<ul style="list-style-type: none"> • Used to measure the mass of a solid. 	

<p>23</p>	<p>Hot Plate</p>	<ul style="list-style-type: none"> • Used to heat substances in the lab. • Its work like a burner on your electric stove. 	
<p>24</p>	<p>Water Bath</p>	<ul style="list-style-type: none"> • A vessel that contain water used to heat or maintain a constant temperature of lab materials. 	
<p>25</p>	<p>Fume Hoods</p>	<ul style="list-style-type: none"> • Used for reactions that give off vapors, especially smelly vapors. • The draft of the hood will sweep away vapors so that the lab itself maintains reasonable air quality. 	

<p>26</p>	<p>Centrifuge</p>	<ul style="list-style-type: none"> • Used to separate or concentrate materials suspended in a liquid medium. 	
<p>27</p>	<p>Separation Funnel</p>	<ul style="list-style-type: none"> • To separate a mixture of two liquids. 	