

## Points to Remember

<b>Solution</b>	<p>A <b>solution</b> is a homogeneous mixture of two or more substances.</p> <ul style="list-style-type: none"> <li>* <b>Solute</b> : The component which is present in lesser amount.</li> <li>* <b>Solvent</b> : The component which is present in larger amount.</li> <li>* <b>Dissolution</b> : The process of uniform distribution of solute into solvent.</li> </ul>						
<b>Types of solution</b>	<p style="text-align: center;"><b>Based on number of components in a solution</b></p> <p><b>Binary solution</b> : solution made of 2 components.  <b>Ternary solution</b> : solution made of 3 components.</p> <p style="text-align: center;"><b>Based on physical state of solute and solvent</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>Solid solution</i></th> <th style="text-align: center;"><i>liquid solution</i></th> <th style="text-align: center;"><i>gaseous solution</i></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• Solid – solid <i>E.g</i> : alloys</li> <li>• Liquid – solid <i>E.g</i> : amalgam</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• Solid – liquid <i>E.g</i> : NaCl in water</li> <li>• Liquid – liquid <i>E.g</i> : alcohol in water</li> <li>• Gas – liquid <i>E.g</i> : sodawater</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• Liquid – gas <i>E.g</i> : cloud</li> <li>• Gas – gas <i>E.g</i> : He-O<sub>2</sub> gas mixture</li> </ul> </td> </tr> </tbody> </table> <p style="text-align: center;"><b>Based on the type of solvent</b></p> <p><b>Aqueous solution</b> : Water acts as a solvent.  <b>Non aqueous solution</b> : Any liquid other than water acts as a solvent.</p> <p style="text-align: center;"><b>Based on the amount of solute</b></p> <p><b>Saturated</b> : No more solute can be dissolved.  <b>Unsaturated</b> : It contains less solute than saturated solution.  <i>Types</i> : Concentrated and dilute solutions.  <b>Super saturated</b> : It contains more solute than saturated solution.</p>	<i>Solid solution</i>	<i>liquid solution</i>	<i>gaseous solution</i>	<ul style="list-style-type: none"> <li>• Solid – solid <i>E.g</i> : alloys</li> <li>• Liquid – solid <i>E.g</i> : amalgam</li> </ul>	<ul style="list-style-type: none"> <li>• Solid – liquid <i>E.g</i> : NaCl in water</li> <li>• Liquid – liquid <i>E.g</i> : alcohol in water</li> <li>• Gas – liquid <i>E.g</i> : sodawater</li> </ul>	<ul style="list-style-type: none"> <li>• Liquid – gas <i>E.g</i> : cloud</li> <li>• Gas – gas <i>E.g</i> : He-O<sub>2</sub> gas mixture</li> </ul>
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<b>Concentration</b>	<b>Concentration of a solution</b> may be defined as the amount of solute present in a given amount of solution or solvent.						
<b>Hygroscopic substances</b>	These are substances that absorb moisture without changing their physical state, when exposed to the atmospheric air at ordinary temperature. <i>Ex</i> : CaO						
<b>Deliquescent substances</b>	These are substances that absorb enough water and get completely dissolved, when exposed to the atmospheric air at ordinary temperature. <i>Ex</i> : KOH						

### Hydrated Salts

Common Name	IUPAC Name	Molecular Formula
Blue Vitriol	Copper (II) sulphate pentahydrate	CuSO <sub>4</sub> . 5 H <sub>2</sub> O
Green Vitriol	Iron (II) sulphate heptahydrate	FeSO <sub>4</sub> . 7 H <sub>2</sub> O
White Vitriol	Zinc sulphate heptahydrate	ZnSO <sub>4</sub> . 7 H <sub>2</sub> O
Epsom Salt	Magnesium sulphate heptahydrate	MgSO <sub>4</sub> . 7 H <sub>2</sub> O
Gypsum	Calcium sulphate dihydrate	CaSO <sub>4</sub> . 2 H <sub>2</sub> O

★ Solubility =  $\frac{\text{Mass of the solute}}{\text{Mass of the solvent}} \times 100$

★ Mass percentage =  $\frac{\text{Mass of the solute}}{\text{Mass of the solute} + \text{Mass of the solvent}} \times 100$

★ Volume percentage =  $\frac{\text{Volume of the solute}}{\text{Volume of the solute} + \text{Volume of the solvent}} \times 100$