

IS MATTER AROUND US PURE

SUBJECT-CHEMISTRY

CHAPTER-02

CHAPTER NAME-IS MATTER AROUND US PURE

CHANGING YOUR TOMORROW



SOLUTIONS AND ITS COMPONENT

Solution:

A solution is a homogeneous mixture of two or more substances. For example: Lemon water, sugar solution, soda water, etc.

Components of Solution:

(1) Solvent: The component of the solution that dissolves the other component in it and is usually present in larger amount, such component of solution is called the solvent.

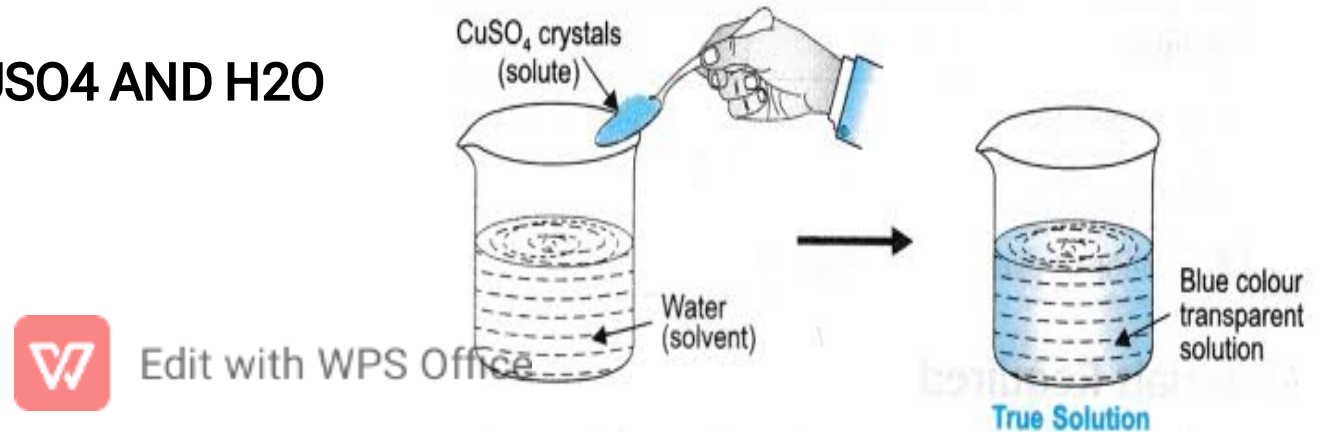
For example: Water, alcohol etc.

(2) Solute: The component of the solution that is dissolved in the solvent and is usually present in lesser quantity, such component is called the solute. For example: Salt, sugar, iodine etc.



PROPERTIES OF TRUE SOLUTION

- A TRUE SOLUTION IS A HOMOGENOUS MIXTURE.
- THE SIZE OF PARTICLES OF SOLUTION IS VERY SMALL HAVING DIAMETER LESS THAN 1 nm.
- PARTICLES OF SOLUTION CANNOT BE SEEN BY ORDINARY MICROSCOPE.
- THE PARTICLES CANNOT BE SEPARATED BY FILTRATION.
- THE PARTICLES OF SOLUTION DO NOT SCATTER LIGHT.
- THE SOLUTION IS STABLE.
- EXAMPLE-SOLUTION OF CuSO_4 AND H_2O



CONCENTRATION AND ITS DETERMINATION

- CONCENTRATION OF SOLUTION IS DEFINED AS THE AMOUNT OF SOLUTE PRESENT IN A GIVEN AMOUNT OF SOLVENT OR SOLUTION .
- IT CAN BE MATHEMATICALLY EXPRESSED BY THE GIVEN FORMULA.
- $\text{MASS PERCENT} = \left(\frac{\text{Mass of Solute}}{\text{Mass of Solution}} \right) \times 100$
- $\text{VOLUME PERCENT} = \left(\frac{\text{Volume of solute}}{\text{Volume of solvent}} \right) \times 100$



SATURATED SOLUTION AND UNSATURATED SOLUTION

- **Saturated Solution**

A solution in which no more quantity of solute can be dissolved at a particular temperature, is called saturated solution.

- **Unsaturated Solution**

A solution in which more quantity of solute can be dissolved without raising its temperature, is called unsaturated solution.



SOLUBILITY

The maximum amount of the solute which can be dissolved in 100 grams of a solvent at a particular temperature is known as its solubility in that particular solvent.

Conditions affecting solubility:

(i) Temperature: Solubility of solids in liquids increases with the increase in temperature, whereas solubility of gases in liquids decreases on increasing the temperature.

• (ii) Pressure: Solubility of gases in liquids increases on increasing the pressure, whereas the solubility of solids in liquids remains unaffected by the change in pressure.



HOME ASSIGNMENT

Exercise II Q18 to Q23

- 1) Express 5 major properties of True Solution.
- 2) Determine the Concentration of KNO_3 dissolved in 240 ml water if 20g of its sample having 25% purity is fully dissolved in it.
- 3) Is there any difference between Solubility and Concentration, if so explain.



THANKING YOU

ODM EDUCATIONAL GROUP



Edit with WPS Office