

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.

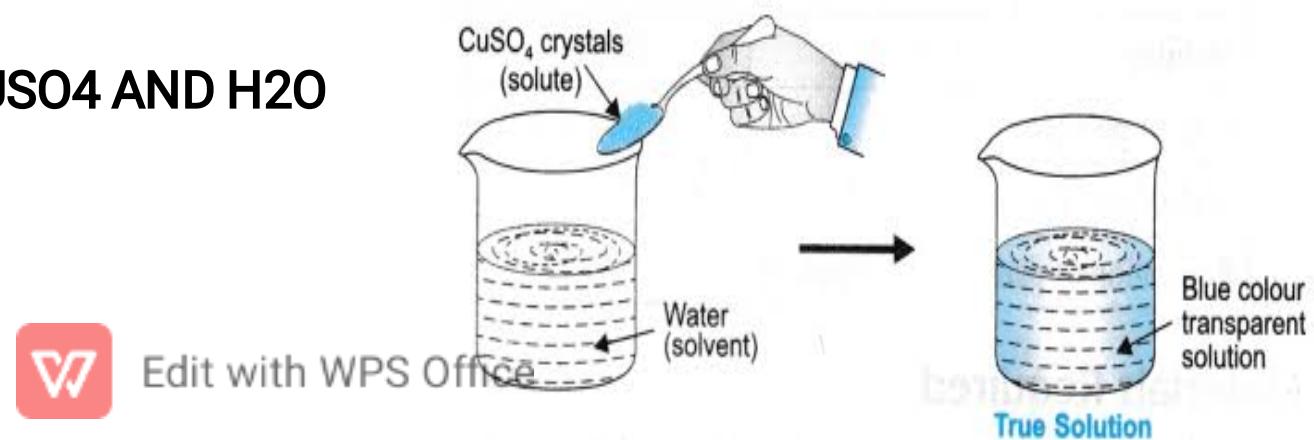
(2) Solute: The component of the solution that is dissolved in the solvent and is usually present in lesser quantity, such component is called the solute. For example: Salt, sugar, iodine etc.



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PROPERTIES OF TRUE SOLUTION

- A TRUE SOLUTION IS A HOMOGENEOUS 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



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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.

- MASS PERCENT= (Mass of Solute / Mass of Solution) X100
- VOLUME PERCENT=(Mass of solute /Volume of solvent) X 100



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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.



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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.



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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.



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THANKING YOU

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